ENGINEERING and MINING JOURNAL.

VOL. XXVII., No. 14.

RICHARD P. ROTHWELL, C.E., M.E., } Editors.
ROSSITER W. RAYMOND, Ph.D., }
WILLIAM H. WAHL, Ph.D., Department of Progress in Science and the Arts.

NOTE.—Communications relative to the editorial management should be addressed to RICHARD P. ROTHWELL, P.O. Box 4404, New York.

Communications for Mr. RAYMOND should be addressed to ROSSITER W. RAYMOND, P.O. Box 1465, New York. Articles written by Mr. RAYMOND will be signed thus *.

SUBSCRIPTION PRICE, including postage, for the United States and Canada, $4 per annum; $2.25 for six months; European countries, including postage, $5.00 = 20s. = 25 francs = 20 marks. South American countries, including postage, $6 = £1 5s. All payments must be made in advance.

REMITTANCES should always be made by Post-Office Orders or Bank Drafts on New York, made payable to THE SCIENTIFIC PUBLISHING COMPANY.

THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
27 Park Place, New York.

CONTENTS.

	PAGE.
EDITORIALS:	
Anonymous Letters	233
The Ammonia-Soda Process	233
Tailings *vs.* Agriculture	233
The Future of Lead	234
Personals	234
The Utah Ceroid Minerals	234
Experiments on the Heating Power of Various Coals	236
The Wells Balance Engine	237
The Mining Debris Question	238
San Juan Silver Mines	239
Coke from Gunnison, Colo	240
Utah Mining Notes	240
Montana Mining Notes	241
PROGRESS IN SCIENCE AND THE ARTS:	
Portable Electric Light Apparatus	239
New Electric Current Regulator	239
Zone Observations of Harvard College Observatory	239
Current Scientific Literature	239
Eozoon Canadense	239
One-Time Igneous Fluidity of the Earth	239
Transfer of a Valuable Collection of Ores	239
Coal-Cutting Machine	239
Oil-Well near Heide in Holstein	239
Pinto's Journey across Africa	239
The Peckham Direct Process	239
Prof. Hayden's Geological Survey, 1878	239
The Solvay Ammonia Process	240
Cerium, Lanthanium, and Didymium	240
Absorption Spectra of Didymium	240
Celloidin	240
Ingenious Method of Mending Broken Castings	240
Phosphorescent Paper	240
Chloride of Calcium in Coal Mines	240
Telegraphic Items	240
The East River Bridge	240
New Mode of Heating Passenger Trains	240
Railway Notes	240
American "World's Fair" in 1889	240
The Vesuvian Railway	240
Wooden Railway Cars Compared with Iron	240
Paper *vs.* Iron Car-Wheels	240
NOTES:	
Messrs. William B. Scaife & Sons, Pittsburg	236
Purchases of Collieries	237
The Pomeroy Rolling-Mill	239
GENERAL MINING NEWS:	
California	241
Colorado	241
Dakota	241
Georgia	241
Idaho	241
Kansas	242
Montana	242
Nevada	242
New Mexico	242
Ontario	242
NEW PATENTS	242
PROPOSALS	242
THE COAL TRADE REVIEW	243
IRON MARKET REVIEW	244
STATISTICS OF COAL PRODUCTION	246
PRICES OF COAL	246
FREIGHTS	247
PRICES OF IRON	248
METALS	248
BULLION MARKET	249
FINANCIAL:	
The Coal Stocks	249
Miscellaneous Stocks and Quotations	249
Gas Stocks	250
Gold and Silver Stocks	250
Copper Stocks	253

ANONYMOUS LETTERS.

The course of this journal in opposing the introduction of unsound speculative schemes upon the New York market, and in exposing operations in mines which are calculated to swindle the public, has brought us many letters of warm commendation and encouragement. It has brought, also, testimonials of a less welcome nature, namely, anonymous communications, calling upon us to denounce this or that party or transaction as a fraud. Usually the evident animus of such productions is personal. Often the proceedings criticised are private sales. The writers would save themselves trouble by remembering three things:

1. Our client is the public; and we do not feel called upon to protect any body else.

2. THE ENGINEERING AND MINING JOURNAL is not to be used, with our knowledge, as the instrument of personal malice or revenge.

3. All anonymous letters should be written on one side of the sheet only, so that we can use the other side (as we do now) to write editorials upon. We can make no other use of them, as the season for kindling fires is about over. *

THE AMMONIA-SODA PROCESS.

The interesting paper of Mr. O. J. HEINRICH, on the Manufacture of Soda by the Ammonia Process, which was read at the Baltimore meeting of the Institute of Mining Engineers, has been published and sent to members. It is almost exclusively commercial, not even containing a summary statement of the reactions involved in the ammonia process, or in the Leblanc, of which it is a successful rival. It is well known, however, that the ammonia process consists in the direct precipitation of sodium bicarbonate from a solution of common salt, by means of ammonium carbonate. The liquor becomes a solution of ammonium chloride, in which the sodium bicarbonate is insoluble, and from which the ammonium salt may be more or less perfectly recovered, by further treatment with calcium carbonate, leaving calcium chloride as the final remainder. That this is a waste product, has been one of the objections to the process, particularly in comparison with that of Leblanc, in which the chlorine of the original brine is utilized in the manufacture of bleaching powder. Another objection is the alleged loss of ammonia in practice.

Mr. HEINRICH considers both these objections with candor, and replies to them with force. The loss of ammonia, he says, can be kept as low as 1 per cent by the use of GERSTENHÖFER'S perfected apparatus; and the calcium chloride, though it has not yet been successfully converted into bleaching powder, is nevertheless not wholly worthless, since it can be used in drying gases, in rectifying spirits, in the preparation of tartaric acid or barium chloride, in the manufacture of glass, as a fertilizer, etc. But, assuming both objections to have full weight, he still shows that, for certain localities, particularly in this country, the ammonia process would be more profitable than the Leblanc. He sums up its advantages as follows: It is independent of sulphuric acid, and hence may be established where salt is cheap, and sulphuric acid dear; it does not require dry salt, and hence avoids the evaporation of brines, necessary in the Leblanc process; its direct conversion of sodium chloride into bicarbonate gives a product of 98 to 100 per cent purity, free from sulphur compounds and from the contaminating salts of the mother-liquor; the apparatus is simple, and the plant for a given product costs only one tenth as much as that of Leblanc; there is a saving in fuel and labor; and there are no noxious products, gaseous or otherwise.

A number of works in England, Belgium, France, Germany, and Hungary are now using the ammonia-process; and Mr. HEINRICH, having visited many of them, and personally observed also the operation of the Leblanc process, brings forward his estimates of cost and profit with well-grounded confidence, since they are based upon the actual results of practice. He shows that soda can be made in this country, at the brine-producing localities, for less than it costs to make it in England, and that a large profit could be secured by the establishment of this important industry in the United States. The subject is well worthy of the attention of capitalists, since an enterprise of this nature, involving an outlay of not more than $80,000, promises with reasonable certainty to pay 50 per cent per annum. *

TAILINGS VS. AGRICULTURE.

The *Mining and Scientific Press*, of San Francisco, published on the 15th of March the report of an important preliminary decision pronounced by a California State court, with reference to the damage inflicted by the tailings of placer, drift, and hydraulic mines upon agricultural lands along the rivers into which such tailings are conveyed. Nearly two years ago, the farmers of Sutter and Yuba counties brought this action in equity, to restrain the miners who discharged their tailings into Bear River and its tributaries, to the great and increasing injury of the bottom-lands, on which large quantities of sand, gravel, and mud have been deposited.

The plaintiff (J. H. KEYES), backed by an association of farmers, introduced testimony on the hearing to prove that of 1069 acres of land owned by him several hundred had been permanently injured by accumulated sediments; that the water of Bear River, once clear, had been rendered by such sediments unfit for irrigation or domestic purposes; and that he had been otherwise put to extra expense and subjected to damage by the overflowing of his lands.

The defendants (some twenty mining companies) tried to show that the land so overflowed would be, in the end, greatly benefited; that the sediment carried by Bear River was in larger proportion due to the present cultivation of lands above those of the plaintiff, which drain into that stream or its tributaries; that the proportion from mine-tailings is annually diminishing, rather than increasing; and that, in any event, prescription, prior right, statute, and equity are on the side of the miner.

The testimony was taken last July, and in February the case was argued before Judge KEYSER, and decided, in equity, without a jury. The findings of the court, just filed, are calculated to be rather startling to the mining industry. The plaintiff's complaint is declared to be well-founded, and the court issues an injunction perpetually restraining the defendants from using the bed of Bear River, or any of its tributaries, as a place of deposit for their *débris*, and from further corrupting the water flowing through any of these channels. In other words, the placer, drift, and hydraulic mines are condemned, not to pay ascertained damages, but to stop entirely. Extracts from the reported decision will be found elsewhere.

An appeal has been taken to the Supreme Court of the State, and the case will, it is said, be carried in the end, on a writ of error, to the United States Supreme Court. It is not quite clear to us on what ground that tribunal can assume jurisdiction; but we hope it may be possible. A decision of absolute authority is very desirable. Meanwhile, a stay has been obtained; and under a bond of indemnity, mining operations will be continued. The final result of the case will affect an amount of min-

ing ground very large in itself, though not perhaps a large proportion of the total gravel-area of the State.

The *Press* takes an optimistic view of the situation, hoping that the controversy will ultimately be adjusted so that "no irreparable or even very grievous injury will result to either party." Should the decision of Judge KEYSER be confirmed, it asks:

"Could not the miners, who are not asked to make restitution for past damages combine their means and purchase these lands, so alleged to be injured and exposed to injury, at an appraised valuation, and by a system of levying, gradually reclaim them in whole or in part, or hold them until such time as these bottoms, through the accumulations of this *débris*, would be so raised and spread out that the streams running through them would make for themselves channels sufficiently broad and deep to carry the muddy water and sand without overflowing their banks?

"This policy, or one involving its main features, has been adopted at least in one instance, and found to work well. The Spring Valley Company, operating a large hydraulic claim at Cherokee, Butte County, after beating the plaintiff in a suit brought against them, as a means of preventing further annoyance, concluded to buy all the farming land along Dry Creek, the outlet to their mine, which they proceeded to do, the quantity purchased amounting to 16,000 acres. Through a sort of combined system of leveeing and irrigation, they have succeeded in increasing the value of this land since it came into their possession from two to three hundred per cent, making the investment a very profitable one, and relieving themselves against the threat of further litigation at the same time. Should the adoption of this plan, or something like it, be found expedient, a part of this muddy water could be advantageously used for irrigating these bottom lands, while a much larger portion could in like manner be disposed of on the dry plains and prairies adjacent thereto.

"So, on the other hand, should the final decision of this question be adverse to the farmers, they, by uniting their means, might be able to divert much of this water from the bed of the streams where it now flows, and employ it in the manner above suggested. Whichever party may in the end be left to deal with this vexatious and troublesome question may well hope to receive some aid from the State to help them in disposing of it. The extensive tule lands lying along the lower portions of these rivers would afford ample and desirable receptacles for all this mining *débris* could it be conducted upon them, and that the question of so disposing of this material will shortly take the shape of a practical engineering problem may reasonably be expected. Rather than see these gold-producing sources cut off, should such result become imminent, the general government would no doubt feel constrained to use its best efforts toward helping to control this *débris* and carry it upon the great swamps, where it is so much needed. In no aspect of the case need we despair of seeing this trouble successfully grappled with, and such disposition made of it as will prevent its working any large interest, whether public or private, a serious detriment."

We can not encourage our contemporary to expect that the general government will go into the ditch and tule business for California. The citizens of that State must work out their own industrial problems. If they choose to let the "cow-counties" squeeze the life out of the "quartz-and-gravel-counties," capital will be attracted to other States and Territories, where mining is more thoroughly protected, that is all. That particular interest seems to be out of favor in the State just now. The anti-Chinese fury, the proposed new constitution, and now the attitude of the local courts toward the miners, are so many blows at the mining industry of California. What is the cause of this change of sentiment in a State which owes to gold-mining its whole development and prosperity? We think it lies largely in the circumstance that so many California mining enterprises have passed through the stage of small individual undertakings. Claims have been consolidated; expensive works have been constructed; large amounts of capital have become anchored to these undertakings; and the number of individual proprietors engaged in mining has been very much diminished. Demagogues have nothing to lose and every thing to gain in attacking an industry thus situated—and California does not lack demagogues.

The certainty of trouble from the collision between the agricultural and the mining interests was pointed out long ago. Some remarks on the subject will be found in chapter xvii. of the report of 1873 of the Commissioner of Mining Statistics, where the withholding from sale by the government of agricultural lands so situated as to be dumping-ground for tailings is approved, and a commission of inquiry into the whole subject is called for. One of the peculiar features of the case lies in the speculative preëmption or purchase of such lands, after the mines have been opened, and specially with the expectation of getting damages from the mining industry. We presume that the plaintiff in the suit just decided was not a speculative farmer of this class. In making up a test-case, of course a strong one would be selected. But the decision, if sustained, will be a *bonanza* for those enterprising souls who have squatted across the mouths of the cañons and gulches of the Sierra foot-hills, and impatiently waited "for the damaging to begin."

THE FUTURE OF LEAD.

The Leadville *Reveille* says: "The heavy decline in lead has seriously affected the smelting business, but it fails to produce demoralization because our smelters are men of capital and men of nerve, able to meet the issue and withstand firmly this causeless attempt on the part of Eastern operators to depress the lead market. If this bear movement is persisted in, we would not be surprised to see our smelters unite and erect refining works in Leadville, so that only fine silver will be shipped East and the lead retained here until remunerative prices shall again be established. This tumble in a single day from $50 per ton for lead down to $21 don't suit the independent nature of Western miners."

Those who are able to comprehend the lead market of this country will not erect refining works at Leadville, nor will they hold their lead after the transportation charges are reduced by the introduction of one or two railroads into the camp. Last year, we were driven to export several thousand tons of lead, and Leadville did but little to swell the production. This year it promises to produce from 20,000 to 30,000 tons, while there are other districts in Colorado that promise to take important positions before the end of this year. The United States must enter into competition with Europe for the markets of China and the East Indies, after which our production of lead, incidental to that of silver, will become so great that we must compete in England and upon the continent. The Leadville producers must learn that at the present rate they are getting very good prices for their lead, and they must not feel disappointed if they have to suffer another decline of $10 per ton. The future of the lead market is dependent upon the price at which European producers can put their lead in the markets, and whenever the lead from Leadville is offered for sale in large quantities, it must be on that basis. If the producers choose to hold their products out of the market, they may enable others to get better prices, but will not benefit themselves. It must be remembered that in the fall the Horn-Silver mine of Utah will have a railroad, cheap fuel, and cheap supplies, and that there is "in sight," according to the experts, enough ore to produce nearly 200,000 tons of lead. It is the intention of this mine to produce the lead in large quantities, and furthermore, to sell it at the best market rates. The price of lead will probably range from 3c. to 3½c. per lb. after the first of August, if not before. Make your calculations accordingly.

PERSONALS.

Our Readers are invited to send us Items for this Column.

Prof. W. P. BLAKE, of New Haven, Conn., will leave early next week for California and Arizona, where he goes to examine some mineral properties.

Governor JOHN C. FREMONT, of Arizona, has been in this city for some time, with the object of showing our capitalists that "there are millions" in his Territory.

Governor HOWARD, of Idaho, is at present in this city (Windsor Hotel). It is understood that the Territorial government is making active efforts to bring the advantages, both mineralogical and agricultural, of the Territory to the attention of the public.

Our Managing Editor, RICHARD P. ROTHWELL, Mining Engineer, proposes shortly visiting the Western mining regions on an extended tour. Parties interested in Western mines or mining properties, who wish to avail themselves of Mr. ROTHWELL'S professional services, can address him at this office.

Mr. W. B. ROSS, M.E., Superintendent of the Santa Gertrudis Silver Mining Company, recently left San Antonio, Texas, for the mines of the company, with machinery to work them according to modern methods. These mines are in the Santa Rosa District, Coahuila, Mexico, one hundred miles southwest of Eagle Pass.

There is a general exodus of miners and others from the anthracite regions of Pennsylvania to the new districts in Colorado, and the solution of the coal question is already "in sight." None of our readers need be surprised to see anthracite selling at the shipping ports before the close of this year at over four dollars a ton, or double its present price. There will not be sufficient labor in the fields to supply the probable demand.

The Russian government has just given a preliminary order—we believe the first ever sent to this country—for engineer's transits and levels, to Messrs. HELLER & BRIGHTLY, the well-known manufacturers of Philadelphia. We have no doubt these first specimens will bring American manufacturers (who bring their instruments to the attention of Russian engineers through the ENGINEERING AND MINING JOURNAL) large orders; for it is admitted by all engineers who have used both that American engineer's instruments are far superior to those of any European maker.

THE UTAH CEROID MINERALS

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I was surprised to find, in your issue of March 22d, that my statement of facts and inferences regarding the harder variety of the Utah ceroid (now known to include a harder and a softer variety, of both of which I have for some time had abundant specimens), designed merely to combat the suspicion of want of *experimental care* on my part expressed by Dr. Newberry, had been seized upon as the occasion of forcing me into a controversy; an attack having been made upon said statement by a son of that gentleman. Notwithstanding an embarrassing lack of time to spare, and a general and habitual indisposition for this species of polemics, I must accept the (somewhat rough) challenge that is thrown to me.

I would, therefore, first recall that I did not identify my sample with Dana's *zietrisikite* in the unqualified way stated by Mr. Newberry, Jr. I did, however, assert the *probability* that it represented a mixture of lower zietrisikites (that is, lower in equivalents and in fusing-points) rather than of higher ozocerites, subject, as distinctly added, to the results of my own further investigation. The senses in which Mr. Newberry uses the terms "groups" and "series" do not appear, and in view of the tenor of his remarks, demand definition. Readers of my article

will see that the *series* meant by me are, as clearly stated, simple "series of organic homologues," differing "by successive increments of H_2C." Mr. Newberry may not literally have found "in the literature of the subject any mention of a 'zietrisikite series;'" but if he denies the ascertained fact, established by the elaborate experiments of Malaguti on the mineral from Mount Zietrisika, that *it* consists of a series of mixed homologues, differing, as such series do, in solubilities, in fusing-points, and in densities, I am sure he will find chemists (including Malaguti himself) at variance with him.

Likewise, if Mr. Newberry continues to affirm, as he has twice already, that Dana intended to erect the native mineral species zietrisikite upon the *fourteenth* and *fifteenth* fractions obtained by Malaguti (*artificially*) by the action of alcohol on the Mount Zietrisika mineral, I am sure he will find mineralogists (including Dana himself) at variance with him, and, moreover, I fear he will find some of them laughing at him.

He says he finds "no other zietrisikite mentioned than that to which Dana ascribes the fusing-point 90°." Alas! that he should say so. Dana begins his description of his proposed distinct species zietrisikite with the Slanik variety of Magnus, fusing at 82° (the *native mineral* of Malaguti fusing at 84°). Dana also puts Johnston's Urpeth fraction, fusing at 73°, under the new specific head, as a sub-species (zietrisikite A), evidently separating it from the ozocerites because its higher fusing-point and difficult solubility in boiling ether take it beyond the reasonable limits of that series; one of these limits being a maximum fusing-point of about 65° (found in a residual fraction by Hofstädter).

The head and front of my own offending (against the Newberry doctrines) appears to be that I have likewise regarded the fusing-point of 71°, with the very sparing solubility in boiling ether, of about one half of my first Utah specimen, as taking it beyond the recorded maximum, and out of the reasonable limits, of the ozocerite series. What has Mr. Newberry himself found? His own record shows that in his specimen (doubtless of the softer variety), a much larger proportion, 65·5 per cent, required the monstrous amount of 370 times its weight of boiling ether during 24 hours for its solution, and fused at 67°, a figure also appreciably higher than the maximum assigned to ozocerite by Dana. I claim that Mr. Newberry, operating on another variety from Utah, has here added strength to my position, by putting his own variety also, as to its main part, outside the ozocerite range.

To clear up the fog that Mr. Newberry throws around the subject of *series*, I would further remind chemical readers of some important considerations, which apply eminently to the study of all mineral hydrocarbons. He finds "no authority for placing the two minerals in different series." The serial relation of simple homology, or mere increment of nH_2C, is not the only one which has been proved to exist among hydrocarbons. Parallel series, or sub-series, isomeric in their corresponding members, are well known, as in Warren's liquid *alpha-naphtha* and *beta-naphtha* series of paraffines, parallel in equivalent composition, but differing in boiling-points, as well as in densities, that is (as I pointed out in a memoir published three years ago*), in the equivalent volumes of the increments of the H_2C radical, in the parallel series respectively. (See also Johnson's *Cyclopædia*, article *Volumes, Molecular*, vol iv. p. 1198). All chemists will admit that the existence of such series of parallel isomeres among *liquid* paraffines indicates their necessary existence also among *solid* paraffines, whose study has, however, been so much neglected by organic chemists that no serial relations have yet been distinctly defined. Among *liquid olefines*, of a number of examples on record, may be cited Warren & Storer's liquid *decatylene*, $C_{10}H_{20}$, or $H_2C.9H_2C$, which, prepared by two different methods, presented the densities, both at 0°, ·7912 and ·823.

In the case of olefines, which are peculiar in being both homologous and isomeric, and which, therefore, all have the same centesimal composition, these principles are less obviously realized; but my new generalization of differing equivalent volumes of the H_2C building up different ramifying series of isomeres will make these phenomena clearly comprehensible by all competent chemists. My previous suggestion—which Mr. Newberry would have us think he has vainly sought "authority for"—that "zietrisikites constitute a series differing in molecular volume from ozocerites," means then that the incremental radical H_2C, whose multiplication in the general formula $H_2C + nH_2C$ furnishes us both ozocerites and zietrisikites, has, in the former case, another, possibly maller, volume than in the latter.

Mr. Newberry begins his decisive demonstrations of the fallacies and inconsistencies of which I have been guilty, by adopting an hypothesis that has been thrown out as a provisional suggestion by Dana, of an approximate equality of increments of fusing-points of five bodies which he tabulates, and which, by reason of such equality, might be suspected to constitute a normal series. He then proceeds to instruct me how to correct my own views by this hypothesis, attempting also, apparently, to square his own results in accordance with this "representative series," so-called by him.

On looking at this tabulation, I would, however, suggest with all humility, that while one of these five "representative" bodies is a natural *mixture*, three others are artificial products of the action of *different* solvents, while another is actually a result of a *destructive distillation* at a high heat!

1. The first, called *urpethite*, is really an artificial hydrocarbon of Laurent, distilled from a bituminous shale. Dana says only, this "may be identical with" Johnston's first fraction, four fifths of the urpethite;† indicating, as I should think might be rationally inferred, that he can not himself have attached to this supposed serial relation the great and leading theoretical importance now demanded for it by Mr. Newberry. It is clear that this first body is utterly without probable relation to the minerals under consideration.

2. *Hatchettite.* This is a recognized *mixture*, and hence not one of "the constituents of the various natural paraffines," so-called by Mr. Newberry.

3. *Ozocerite* of Hofstädter, so-called. This one, on again referring to Hofstädter himself, turns out to be only the first one (and probably the smallest one) of the *eleven* fractions which H. obtained by fractional crystallization from *alcohol* (not ether).

4. Johnston's Urpeth residuum—"almost insoluble in boiling alcohol and ether," as J. states it. It does not appear, however, that Johnston subjected it, according to Mr. Newberry's practice, to nearly 400 times its weight of boiling ether for twenty-four hours!

5. The last of these five proximate "constituents of the various natural paraffines" comprises the *fourteenth* and *fifteenth* (by a probable misprint in Dana, the *fourth*) *last* fractions, by boiling alcohol, of Malaguti's Mount Zietrisika mineral.

I submit that I can not but decline to accept this basis for classification, as urged by Mr. Newberry. A postulate he himself deems self-evident is, that "the only just comparison is between corresponding fractions," which, if true, puts this initial point of his argument in a decidedly unfavorable light. Thus, for instance, the Hofstädter body is his *first alcoholic* fraction, while the Malaguti body is his *last* similar product, and that of Johnston is his last (probably *ethereal*) fraction.

Mr. Newberry has found three specimens of "Galician ozocerite" in the collection of the School of Mines to fuse at 63°, 69°, and 72°. What would he have us infer? Does this make the Utah mineral an ozocerite? Would it not be well to remember that Dana's new name (new in 1869) *zietrisikite*, for the hydrocarbons difficultly soluble in boiling ether and fusing above the neighborhood of 60°, is but little known and less recognized as yet by collectors? Hence, every thing of the ceroid class has heretofore been called by them *ozocerite*. Would it not be well, before we assume the School of Mines specimens to be all ordinary ozocerite, to apply to them the first criterion proposed by Dana, that of solubility in a reasonable amount (*not* the inordinate proportion of 500 centimeter cubes to the gram) of boiling ether? The only alternative is to reject altogether Dana's criterion, together with his new specific name, which I, for one, would demur to, as I deem Dana's specific distinction a useful and (approximately) true one. I would myself go farther than Dana, and propose a closer *provisional* division, depending on feel, hardness, fusibility, and solubility combined. This Utah mineral clearly and definitely falls somewhere *between* average ozocerites and the Mount Zietrisika mineral of Malaguti.

My remark that I have found the mineral ceroid hydrocarbons generally to be entirely distinct in composition and relations from true *paraffines*, and that they should hence not be so-called, is also apparently regarded by Mr. Newberry as involving an inquiry beyond my capacity to forward, and hence he himself winds up with a promise to devote his own energies thereto. Under these circumstances, it is incumbent on me here to present my own results, though—for fear of abusing the indulgence of the JOURNAL—in more condensed form than I had wished, and with necessary omissions of points of interest.

1. Oil of vitriol, to which every body knows that paraffines are almost or wholly indifferent, immediately and violently chars both varieties of the Utah ceroid, when they are melted therewith, sulphurous oxide being copiously evolved, with strong white fumes, indicating formation of water. I can not now further note the results; but this alone separates our Utah mineral from the $H_2.nH_2C$ series, or paraffines, and establishes an affiliation with the $H_2C.nH_2C$ series, or olefines.

2. One remarkable peculiarity of this whole class of ceroid minerals, according to my observation, is an indisposition to *crystallize* from solvents. The residues of evaporation, and the deposits on cooling, are almost always amorphous, granular, or concretionary, presenting under considerable powers but indistinct evidence of crystalline structure. Nothing could be more uncharacteristic of paraffines than this behavior.

3. In order to settle the main question, that of *composition*, I have collected *all* the reliable analyses known to me of ceroid minerals, from original sources, and recomputed them according to the true equivalent-weight of carbon, as many of these analyses date before 1841, previous to which carbon was usually rated, after Berzelius, at 12·26.*

	C.	H.	Sums.
1. Hofstädter, Boristow	84·94	14·87	99·81
2. " "	85·79	14·29	100·08
3. Malaguti, Mt. Zietrisika	85·03	13·71	98·74
4. " " "	85·03	14·19	99.22
5. " " "	84·64	13·74	98.38
6. " " "	84·807	14·138	98·945
7. " " "	84·593	14·152	98·745
8. Johnston, Urpeth Colliery	.....	14·09	.....
9. " " "	.....	14·06	.....
10. " " "	85·554	14·06	99·614
11. " " "	83·812	13·649	97·461
12. " Hatchettine	84·736	14·624	99·36
13. Magnus, Slanik	84·615	15·305	99·92
14. Schrötter, "	84·43	13·69	98.12
Means	84·8314	14·1835	99·0149
Means, computed to 100 parts	85·68	14·32	100
Olefine percentages	85·71	14·29	100
15. With Newberry's new analysis of the Utah ceroid, namely	86·15	13·75	99·9
The mean of the whole 15 becomes	84·933	14·1545	99·0875
This mean, computed to 100, gives	85·714	14·286	100

The above tabulation is confined to analyses of native minerals, or fractions obtained by solution, rejecting all products of distillation, which I believe to be paraffines, or at least mixed therewith. Thus, Walter's analysis is omitted, as it was made on a distilled product (though inadvertently cited by Dana as on a crude mineral from Truscawicz).

Several of the analysts mention error as arising from volatilization of the substance in the combustion tube; but some rightly regard this as not much affecting the relative percentages of C and H. It will be observed that, curiously, the analysis of the Utah mineral by Mr. Newberry just serves to balance the trifling residual mean error of the rest, bringing the whole to what may be called the *precise theoretical figures for an olefine*. His interpretation of his own analysis furnishes an example of the effect of a predisposing hypothesis. *Stat pro ratione voluntas.* His figures are much further away from a paraffine than from an olefine, but, being determined to find the former, he not only virtually rejects the testimony of his own observation, but decides (*O mens cæca mortalium!*) that "analysis is of no assistance in identifying these minerals."

March 26, 1879. Respectfully, HENRY WURTZ.

* *American Chemist* for March, 1876.

† Dana has assigned, by some inadvertence, to the crude *urpethite*, the fusing-point (39°) of the first fraction. As stated by Johnston, the crude mineral "fuses at 140° F. (60° C.), but attains its greatest fluidity at 160° F. (71° C.)." This appears to suggest that *all* the fusing-points of this class of minerals might well be revised, by means of the new and valuable device I have used of the coated thermometer-bulb in hot water.

* In Dana's *Mineralogy* several of the analyses are cited without this essential correction.

EXPERIMENTS ON THE HEATING POWER OF VARIOUS COALS.

By an order of the Admiralty in Berlin, a series of experiments were made during the years 1874, 1875, and 1876, to ascertain the heating power and other interesting qualities of German, English, and Japanese coals at the Government Quay, in Wilhelmshaven, by government officials.

These experiments were chiefly made to find the most suitable coal for the German navy from the Prussian collieries, and at the same time to try some of the English and Japanese coals, to find and test the peculiar properties these coals were supposed to possess. Not alone was the heating power of the coals found, but other important properties were noticed, such as the speed of igniting, rapidity of burning, the amount of smoke, their power of cohesion, and the amount of ash, all of which are, as many of our readers are aware, of great importance in the navy.

DESCRIPTION OF THE EXPERIMENTAL APPARATUS.

The heating power of the coals was tried in a boiler that held 19,800 lbs. of water, being of the same type and proportions as the boilers used in the imperial navy.

Dimensions of Boiler—Tubes of Brass.

	Inches.
Thickness of tube plates	0·624
" fire-chamber plates	0·429
" rest of plates	0·39
Diameter of tubes outside	2·925
" " inside	2·59

Heating Surface of Boiler.

	Square feet.
Area of fire-chamber	70·58
" back smoke-box	88·19
" front "	46·81
" furnace tubes	878·02
Total	1083·60

Total area of fire-grate, 37·94 square feet, giving 28 square feet of heating surface to 1 square foot of fire-grate. Number of tubes in boiler, 176.

The chimney was 39·36 ft. high with a diameter at base of 2 ft. 7·2 in., tapering at the top to a diameter of 2 ft. 3·3 in.

The boiler stood free in a spacious boiler-house, and was fed from two feed-water tanks, which were placed above the boiler so that the water, through its weight, could flow into the boiler.

On each side of the feed-water tanks was a glass water-gauge, on the glass tube was fixed a scale on which was marked the weight of water in kilograms, so that at a glance could be seen what weight of water was used to feed the boilers, without allowing for temperature, which involved a separate calculation. These scales were constructed by pouring weighed quantities of water at a certain temperature into the tank and making the heights on the scale. Such a scale was also fixed upon the boiler.

The feed-water tank No. I. was measured with water at a temperature of 58 degrees Fahr., that of No. II. at 62 degrees Fahr.

POWER OF COHESION.

For this experiment, the coal was hammered into pieces weighing from 0·44 lb. to 1.1 lb., and these were made to pass over a sieve or screen inclined at an angle of 40 degrees. This screen was 5·74 ft. long, and 3·28 ft. broad, with meshes 1·17 in. square.

From the pieces that passed over this screen, 110 lbs. of such pieces were placed in a revolving cylinder. This cylinder was 3·772 ft. long and 2·79 ft. in diameter, and was furnished with a sliding door by which the cylinder was filled with coals. In the inside of this cylinder at the periphery, three radial walls 6 in. in height were fixed, and the axle was mounted on bearings, by which the whole apparatus could be made to revolve. The experiment consisted in placing the 110 lbs. of coal which had passed over the screen before described, and making the cylinder revolve at fifty revolutions a minute for about two minutes; then the coal was taken out and passed over the same screen again, and weighing the coal that passed the screen gave the percentage of round coal of the 110 lbs. This was done with the coal three times, and the average taken.

RELATIVE WEIGHT.

In this experiment the coals were hammered into pieces not more than 1·1 lb. in weight, and passed over the same screen as that before described; the screened coals being filled into a box exactly $\frac{1}{4}$ cubic meter in capacity, four such boxes full gave the weight of a cubic meter in pounds.

HEATING POWER.

In this experiment, it was necessary that the coals should be of the same size and dryness.

If the coals had got damp in transport, they were laid or spread on the boiler-house floor in a thin layer for three or four days, the temperature of the shed being about 68 degrees Fahr.; then the coals were hammered into pieces not larger than the fist and allowed to pass over the screen.

The calorific power of the coal was then found in the following manner: A quantity of coal was weighed for the purpose of heating the water in the boiler to boiling-point, this coal being for that purpose ignited by a layer of wood and shavings, and if this quantity of coal was found insufficient for the purpose, a further weighed quantity was added.

The experiment commenced when the water in the boiler commenced to boil, and the fire in the grate was so low that only the next supply of coal could keep it burning. The boiling of the water was noticed by a thermometer, the bulb of which was in the boiler; the boiling was also noticed by the escaping steam and the oscillations of the water which could be noticed in the water-gauge. At the commencement, then, of the experiment, the fire-grate was strewn over with weighed quantities of coals, the temperature of the feed-water and its height in the tank, as also that of the boiler, being carefully noted down. During the experiment the temperature of the feed-water was noted at every quarter of an hour, with also the quantity of water flowing into the boiler, which was so regulated as to insure a uniform height in the same.

Great attention had to be paid to the burning of the different coals, so that their peculiar properties might be thoroughly noticed. To watch the state of the fire, glass peep-holes were fitted to the fire-doors; also great care had especially to be taken in keeping the fire at a right thickness—from 3·9 in. to 4·68 in. in most cases—so that the caking coals were prevented from clinking and the small coals left unmolested.

Any slag that filled the bars was removed as much as possible, and all the unburnt coals that fell through the bars were again thrown on the fire. After every charge of coal, the amount of smoke was carefully noted down, with its duration.

When the last charge of the weighed quantity of coal on trial had been thrown on the fire, the fire was allowed to burn so low that the quantity remaining was equal to the quantity which had been burnt at the commencement of the experiment in making the water boil. The height of the water in feed-tanks and boiler was noted down; but owing to the irregular shape of the boiler, the quantity could not be accurately determined by the scale, and, to insure perfect accuracy, the quantity of water remaining at the end of the experiment was made equal to the quantity with which the boiler started.

DETERMINATION OF THE AMOUNT OF ASHES AND SLAG, ETC.

In finding the quantity of unburnt fuel, the boiler was allowed to cool down, and the next day the slag was pressed through the bars and weighed, which gave the amount of unburnt fuel or slag. The ashes in the ash-pit, together with the ashes found in the tubes and the soot, was collected and weighed, and the results given in percentages of the total quantity of coal burnt.

No attention was paid to the very small particles of coal found in the ashes and slag,

CALCULATION OF THE HEATING POWER.

After the readings of the scales on the feed-water tanks were corrected for temperature, and the vaporized mass of water reduced to 0° C. by the formula (to 30° F.)—

$$v = \left(\frac{v\ 637 - v\ t}{637}\right) = \frac{V\ (1179 - t)}{1146}$$

The heating power was found by dividing the weight of water so calculated by the weight of coals burnt.

ANALYSIS OF SOME OF THE COALS MADE IN THE LABORATORY OF THE MINING ACADEMY AT BERLIN.

	Nixon's steam navigation coal.	Colliery Ringeltaube, near Annen. Seam 2.	Colliery Ringeltaube, near Annen. Seam 3.	Colliery Hamburg, near Annen. Seam 3.	Colliery Nachtigal, near Bommern. Seam 2.	Colliery Hamburg, near Annen. Wittmer seam.	Colliery Bickefeld.
Carbon	89·44	89·05	88·35	88·28	87·12	84·48	86·36
Hydrogen	4·10	4·76	4·35	4·18	4·54	4·10	4·01
Oxygen and nitrogen	2·93	3·90	4·85	5·32	3·29	5·80	3·51
Sulphur	0·10	0·18	0·24	0·29	0·65	0·68	1·45
Hygroscopic water	0·67	0·54	0·67	0·48	0·57	0·52	0·73
Ash	2·78	1·56	1·54	1·45	0·82	4·43	3·94
Specific gravity	1·476	1·433	1·425	1·380	1·484	1·423	1·463
Dry residue from destructive distillation	89·71	84·35	87·59	86·11	84·89	84.09	86·66

The *Colliery Guardian*, from which we take this report, publishes tables giving in detail the results of these experiments. The following abstract summarizes the results obtained:

[EXPERIMENTS ON THE HEATING POWER OF COALS.

COALS.	Amount of coals used.	Weight of a cubic foot in broken state.	Power of cohesion or percentage of round.	Amount of ashes, slag, etc.	Amount of coals burnt per sq. ft. of fire-grate per hour.	Lbs. of water evaporated per lb. of fuel from 32° F.	Amount of smoke.
GERMAN COAL:	T. cwt. lb.	Lbs.	P. c.	P. c.	Lbs.		
Westphalian gas coal; average of 7 samples	12 18 34	45·2	70·66	8·19	22·3	6·986	Large.
Westphalian bituminous coal; average of 38 samples	70 16 28	46·9	42·45	8·19	18·16	8·195	Moderate.
Westphalian open-burning coal and anthracite (manufacturing coal); average of 15 samples	26 14 46	48·4	45·78	10·84	18·2	8·055	Very little.
Wurm District, Kohlscheid coal; 1 sample	0 19 72	48·3	64·0	8·67	7·6	8·582	None.
Upper Silesian coal; average of 3 samples	5 14 43	45·1	78·12	4·66	24·6	7·231	
ENGLISH COAL:							
Welsh coal; average of 5 samples	14 15 12	45·8	47·7	8·45	19·2	8·335	Large.
Scotch coal; 1 sample, from West Limerigg	3 4 0	45·7	70·39	7·14	24·8	6·954	Very moderate
Newcastle coal; 1 sample	1 12 0	44·1	77·32	4·853	23·1	7·278	Large.
JAPANESE COAL; 1 sample	1 6 0	47·4	76·00	10·99	29·9	5·257	Large.
PATENT FUELS:							
Wurm District, near Kohlscheid	1 15 40	39·3	61·6	8·63	16·4	8·341	None.
Crown Preserved Coal Co., Limerick	1 12 0	43·4	38·94	17·82	21·6	7·367	Heavy.

MESSRS. WILLIAM B. SCAIFE & SONS, of Pittsburg, are now shipping the materials for the iron pier which is erecting at Long Branch. The principal portion goes in the shape of 127 tubular iron girders, weighing about 1800 pounds each, made of plate and angle iron, and wrought-iron tubes riveted in sections of about 20 feet each, making one of the finest samples of rivet-work to be seen in the country. The work is to be finished by April 12th. The pier is to be 660 feet in length, with a roadway of 25 feet, the outer end widened to 50 feet, with room for buildings for various purposes.

THE WELLS BALANCE ENGINE.

In the Wells balance engine, steam is admitted at both ends of the cylinders simultaneously, forcing both pistons to the center. Steam is then admitted in the center, between the two pistons, forcing them back to the ends of the cylinder, completing the revolution.

The middle piston-rod, moving through the stuffing-box, in the front piston-head, is packed with metallic rings, automatically adjusted with springs (as shown in cuts 2 and 3).

By using two pistons in one cylinder, the area and pressure are doubled. As the two pistons move to and from each other at equal speed, they jointly traverse a cylinder of a given length in half the time required for a single piston to traverse it at the same speed; thus the same speed per foot of piston in the balance engine transmits double the power transmitted by a single piston. By increasing the speed of the double piston fifty per cent (which can be done because of its perfect balance), it is claimed the engine will transmit three times the power obtainable from the ordinary engine with a given size of cylinder.

The advantages claimed for this engine are:

1. It is sold for much less than any other engine of equal power.
2. It uses less fuel for a given duty.
3. It gives high speed of shaft and steady motion.
4. It weighs only one fourth as much as other engines of equal power, and therefore can be handled and transported at one fourth the cost. The great difference in its weight arises from the fact that the force of the steam is confined within the cylinder, and is not transmitted to the bed-plate or frame. Hence the latter can be made very much lighter; and the weight of the fly-wheel is also reduced, because of its increased velocity and momentum.
5. All the steam force on the cranks being exerted in torsion (or in turning the shaft), there is no strain on the frame or foundation; hence it requires only a slight foundation. The engine can be placed in any part of a building where the floor is strong enough to support its weight. The fastening is required to be only sufficient to resist the traction of the driving-belt, or the strain from the driving gear.
6. It occupies about half the usual space—having a double crank with the shaft in the center. Each crank arm is only half as long as the crank of a single piston engine of equal length of cylinder. This reduces by one half the angle of the connecting rod, which shortens the engine about one fourth, and in an engine of equal power, more than one half.
7. The weight of the steam force on the pistons being balanced, the main shaft bearings are entirely relieved of all the consequent friction, and only the friction from the actual amount of power transmitted remains on the crank-pins; therefore, high speed of shaft can be obtained without heating or jarring.

These engines have made one thousand revolutions per minute without being fastened to the floor, and nine hundred revolutions per minute without caps or binders on the shaft. Several are in use driving dynamo-electric machines, connected directly, and making seven hundred revolution per minute, with a perfectly steady motion. Circular saws may be attached to the crank-shaft directly.

8. Increased durability is also gained by its ease of action, owing to its entire exemption from unequal strains and jarring. The main bearings, having only the weight of the moving parts to support, will not heat and cut, and the pressure being always uniform, the wear will be equal in the whole circuit.

The force being applied on opposite sides of the shaft, both crank-arms traveling in the same direction, we avoid the thrust of the single piston, which greatly lessens the liability of breaking the cranks or shafts: the force being balanced on opposite crank-arms, there is no strain whatever on the crank-arms or shaft, except the actual amount of work being done.

In marine work it is claimed that this engine gives great economy in fuel, high speed of vessel, and materially reduces the weight of engine and the space it occupies. Applied to locomotives, the advantages of this engine are claimed to be very important.

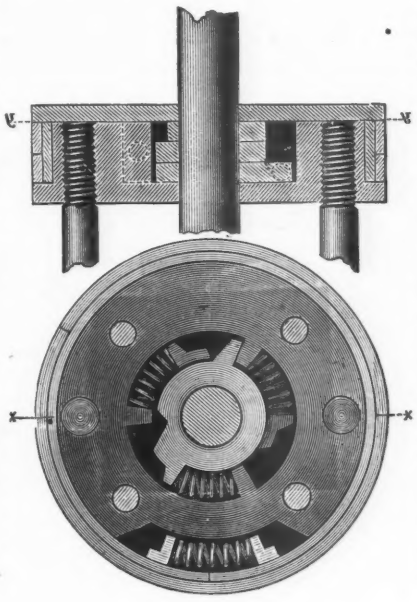


FIG. 3.

In Fig. 2 of the illustrations, *A A* and *B B* are the injection and ejection ports. *C C* are the piston-heads. *D* is the middle piston-rod, which works through the front piston-head. *E E* are the outside piston-rods. *F* is the middle connecting rod. *G G* are the outside connecting rods. *H H* are the middle crank-arms. *I I* are the outside crank-arms. *J* is the shaft. Line *K* shows the center of action, or where the strains meet.

This engine is manufactured by Justin R. Wells, 86 Liberty street, New York City.

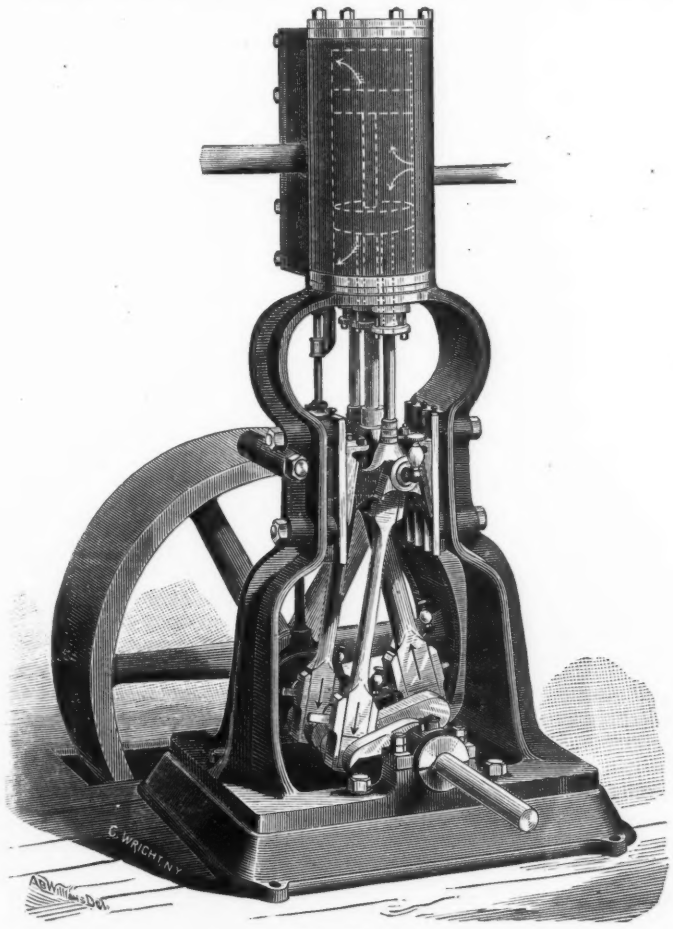


FIG. 1.

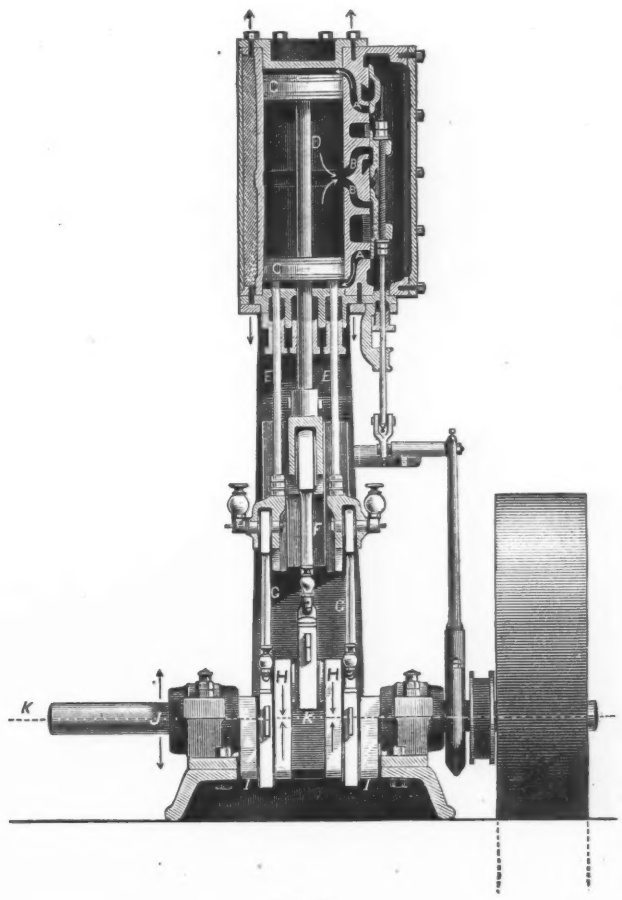


FIG. 2.

PURCHASES OF COLLIERIES BY THE PHILADELPHIA & READING COAL AND IRON CO.—The Philadelphia & Reading Coal and Iron Co. has recently purchased the Gilberton colliery, located at Gilberton; Turkey Run colliery No. 1, owned by Haas, Brenizer & Co., located at Shenandoah; and Tunnel Ridge colliery, owned by Mr. Geo. W. Cole, and located at Mahanoy City.

THE MINING DEBRIS QUESTION.

ESSENTIAL POINTS OF JUDGE KEYSER'S DECISION.

In the District Court of the Tenth Judicial District, of the County of Sutter.

James H. Keyes, plaintiff, *vs.* Little York Gold-Washing and Water Company (limited) *et al.*, defendant.

Findings of fact and conclusions of law.

The above cause came on regularly for trial at the June term, 1878, of this court. The plaintiff appeared by George Cadwalader, P. Van Clief, and J. H. Craddock as his attorneys, and the defendants appeared by S. M. Wilson, W. C. Belcher, A. B. Dibble, and James R. Byrne as their attorneys.

And on the 26th day of July, 1878, the court proceeded to hear the testimony offered on behalf of the plaintiff and defendants, the hearing of which occupied until and including the 9th day of August, 1878.

On the 17th day of February, 1879, the cause was argued by the respective attorneys and submitted to the court for decision, and now the court, having duly considered the said above evidence and the arguments of counsel, and deliberated thereupon, now files its findings of fact and conclusions of law as follows:

FINDINGS OF FACT.

I. The plaintiff is the owner and in the possession of 1069 acres of land situated in Sutter County, State of California. * * *

Upon these lands, between 1862 and 1871, the plaintiff placed lasting and valuable improvements, costing more than $10,000, and consisting of a large dwelling-house, two barns, out-houses, orchard, and a number of miles of fence, and *the like*, all of which improvements were on said land at the time of its overflow with mining *débris* or tailings in the years 1875 and 1876, hereinafter described.

The said lands of plaintiff in their original condition were highly productive alluvial lands, adapted to the raising of wheat, corn, and all the valuable agricultural products of the State.

That on the 15th day of January, 1875, 400 acres of plaintiff's lands were overflowed with the tailings or *débris* from the defendants' mines, to a depth varying from three inches to three feet, and in March, 1876, from the same cause substantially, the same part of plaintiff's lands was again covered with another deposit of mining *débris* from the defendants' mines. * * *

The mining *débris* referred to consists of fine and coarse sand, small stone and sticky compound, composed of clay and sand, called slickens.

The effects of such overflows and deposits were to render the land overflowed and unproductive and incapable of any kind of cultivation during the year of the overflow and the year succeeding, and to permanently injure and largely impair the value of the land so overflowed, and to largely reduce its producing capacity, and to make it necessary for plaintiff to raise his dwelling-house and out-houses and barns, which were situated on said overflowed lands, so as to make them habitable and fit for use, to likewise raise his fences, and to expend large sums of money in repairing old and constructing new levees in and about which and for the protection of his said lands, he has expended over $20,000.

That the deposits of the mining *débris* on plaintiff's land in 1875 and 1876 were an obstruction to the free use of that property, and interfered with its use and enjoyments, and very largely impaired its value in the market as well as its producing capacity.

That these deposits of mining *débris* upon plaintiff's land in January, 1875, and March, 1876, were part of the mining tailings deposited by the defendants in Bear River and its tributaries, and which, by the waters of that stream and the water used by the defendants in their mining operations, had been swept down Bear River upon the lands of the plaintiff.

That a continuance by defendants of their manner of using the bed of Bear River and its tributaries as a place for the deposit of their mining tailings will prevent the cultivation and utterly destroy all of plaintiff's land, and render it unfit for agricultural uses or as a place of habitation.

That the defendants, during the time they work their mines, render the water of Bear River, opposite plaintiff's land, totally unfit for domestic or animal use or for the purpose of irrigation.

II. The defendants are the owners of mining claims, which, three years before the commencement of this suit, and ever since, they have worked by what is called the hydraulic process of mining.

These mining claims are situated at an elevation of 3000 feet, or thereabouts, above the level of the sea, about 60 miles from plaintiff's lands, and upon the hill-tops adjacent to Bear River and its tributaries, and all lie within a radius of seven miles. These mining claims, in the aggregate, include several thousand acres; one above containing 1110 acres; the average depth to which these claims mined exceeds 50 feet; the upper part of these claims consists of free surface earth, the greater part of which was washed away into Bear River prior to 1862. * * *

Unequal deposits are made from the several mining claims of defendants, depending upon the quantity and pressure of the water used by them, and the hardness or softness of the material at the time being worked.

These claims are worked from five to six months in the year, starting up about the 1st of January, and continuing as long as the water lasts.

The deposits of the tailings from the mining claims of the defendants and at their dumps during the three years next preceding the commencement of this suit were nearly 20,000,000 of cubic yards of tailings, and the annual deposit has been in that ratio, and is rapidly and annually increasing.

The mining claims of defendants are now only worked out to one quarter their extent.

The number of men who receive employment from the mining claims of defendants is between 400 and 500.

The mines of defendants are the only ones shown by the testimony to have been in operation at the head of Bear River at the commencement of this suit, or during the three years before the commencement of this suit. * * *

The water, when first used by defendants' mines, is clear, but in being used for hydraulic mining, gains in solution about five per cent of its volume in earthy matter, and carries that percentage currently with the current down Bear River as far as plaintiff's lands. Water taken from Bear River opposite plaintiff's lands in January, 1875, contained nearly 30 per cent of earthy matter. The travel of the heavier sand not held in solution by water is about eight miles per day, while cobble-stones from defendants' mines are forced by the water down Bear River, but at a slow rate. That since 1873 there has been a sensible and steady increase in the quantity of mining *débris* or tailings coming down Bear River into the valley from the mines of defendants, and this increase will steadily continue for years to come.

The deposits of mining *débris* from the head of the river have increased the grade, the bed of the stream, and smothered its bottom, and a smaller quantity of water brings down a greater amount of mining tailings than before such changes in the bed of the stream occurred; that at least 40,000 acres of valuable and productive agricultural land in the valley of the Bear River, and the Sacramento proper, eventually will be covered to the depth of several feet with mining tailings from the mines of defendants, and be rendered unproductive and uninhabitable if defendants continue to use the head of Bear River and its tributaries as a place of deposit for their mining tailings.

That within a short time after the hydraulic mines at the head of Bear River stop work, the water of Bear River becomes comparatively clear and fit for use, even after the early freshets of the winter, but before the hydraulic mines resume their operations. * * *

That plaintiff never acquiesced in the wrongful acts of defendants, and has not yet been guilty of laches or faults in not applying for relief sooner, as he, and a large number of persons owning similarly situated land in the valley of Bear River, were endeavoring, by constructing levees, new channels, drains, opening sloughs and straightening channels to protect their lands from being overflowed by mining *débris*, and believed that they could so protect themselves and were expecting a diminution in the flow of tailings, and that they would have succeeded in protecting their lands but for the increase in the deposit of tailings in the bed of Bear River and its tributaries and the increase in the flow thereof into the valley of Bear River commencing in 1873, and gradually increasing and ending in the overflow of January, 1875, and March, 1876, of plaintiff's land as described in the first article of these findings; that at the commencement of this suit the waters of Bear River opposite plaintiff's land were, and are now, so foul and corrupted by the deposit of mining tailings therein from defendants' mines, as to be unfit for use by man or animals or for the purposes of irrigation.

III. That each of the defendants has materially contributed to the injury and damage of plaintiff's land by washing into Bear River and its tributaries the tailings from their several mines, and intend to continue so to do.

That it is and will be impossible for plaintiff to ascertain or prove the proportion in which either or any of the said defendants have contributed to his damage and injury as aforesaid or will hereafter contribute to the damage and injury apprehended by him as aforesaid. * * *

V. That about the year 1852, mining districts were formed which embrace all the mining claims of defendants, and mining laws were adopted, describing the size, mode, and manner of locating and holding mining claims in such districts, and when such modes and regulations were not regularly adopted, those matters were controlled by the customs prevailing in such district or districts. No law, custom, or usage regulated or purported to regulate the manner in which mining claims should be worked. Locations of mining claims were made in accordance with the laws thus adopted; water for mining purposes was appropriated, ditches constructed, and many operations requiring the use of water were commenced. The operations have been carried on with some intermissions and changes in the mode of working.

Continuously, up to the present time, since the commencement of gold washing in California to the present time, miners have discharged the tailings coming from mines into the nearest or most convenient ravine or outlets, and such has been the practice in all the mining districts of the State.

That from 1856 up to the present time, the defendants and those through whom they claim, and all others engaged in mining within the water-shed of Bear River, have openly, continuously, and notoriously washed, worked, and mined their claims by the use of water as a power, and dumped and discharged the tailings from their mines into said Bear River and its tributaries, streams, cañons, and ravines, as was most convenient and practicable. * * *

Hydraulic mining, in the sense in which that term is now generally understood, was introduced in the mining districts at the head of Bear River in a limited way as early as 1852.

The defendants, except those engaged in drift mining, have, in conducting the mining operations, followed what is called hydraulic mining, in the manner in which the same is described in the findings; and this method of mining is the most economical as well as the most effective method known of separating such gold in such mining claims from the earth, stone, and gravel, which contain it.

The dumps, or places of discharge of the various mines of the defendants, are not contiguous nor in close proximity to each other, with a few exceptions, but in all cases the tailings from the various mines commingle and run together in Bear River before they reach the land of the plaintiff. Said dumps are in many instances several miles apart from each other.

The gold contained in the gravel deposits on the Blue Lead, upon which the claims of defendants are situated, varies from $50,000 to $300,000 per acre, as estimated or conjectured.

The cessation of hydraulic mining would greatly reduce the taxable property of all the mining counties of the State.

VII. The cause of action of plaintiff and his right to the relief demanded by him is not barred by any or either of the statutes of limitations set up by either of the defendants in their answers herein.

CONCLUSIONS OF LAW.

1. That the plaintiff's cause of action and his right to the relief herein demanded is not barred by all or either of the statutes of limitation pleaded by the defendants in this case or otherwise.

2. The defendants, or either of them, have not acquired any right to use the bed of Bear River nor the beds of its tributaries as a place of deposit of their mining tailings, nor to choke and fill with such tailings the channels of Bear River in the valley thereof, nor to flow or overflow plaintiff's lands with such tailings, nor to corrupt, foul, and make unfit for domestic, animal, or irrigating uses the water of Bear River.

3. The acts of defendants, and each of them, constitute a nuisance and are an obstruction to the free use by plaintiff of said lands and an interference with the comfortable enjoyments of said property by him.

4. The mining laws and mining customs of the several mining districts mentioned and referred to in the findings of fact herein were not intended to, and did not and can not, protect the defendants in the doing of the acts, matters, and things complained of in this action.

5. The plaintiff is entitled to the relief by him demanded. Let judgment be entered accordingly. PHIL. W. KEYSER, District Judge.

DECREE.

James H. Keyes *vs.* Little York Gold and Water Co. (limited), *et al.*

In the foregoing cause, the defendant, having duly appeared, and the case having been duly tried and argued, the court, after due consideration thereof, doth order, adjudge, and decree as follows, to wit: That D. W. Balch, substituted as a defendant herein instead of the Little York Gold-Washing and Water Co. (limited); the Cedar Creek Gold Mines and Water Co. (limited); the Bird's-Eye Creek Gold Mining Co. (limited); Franklin Gravel Mining Co.; Polar Star Hydraulic Gold Mining Co.; Elmore Hill Hydraulic Mining Co.; Chalk Mountain Blue Gravel Co.; Gold Run Ditch and Mining Co., substituted as a defendant instead of the Miners' Ditch Co.; W. and P. Nichols, substituted as defendants instead of John, Charles, and James Staples; also J. H. Le Kamp and B. Huysink, W. H. Raymond and John Hussey; Camden Mining Co., substituted as a defendant herein instead of Edward Carney and P. L. Goodspeed; L. W. Preble, A. A. Sargent, and William Jacobs, co-partners under the name of Sargent & Jacobs, the latter substituted as defendant instead of George F. Jacobs; also H. Knight and William Knight, co-partners under the name of Knight Bros.; Conrad Wyck and P. Wyck, A. N. Nutting, Alonzo Cooper, J. B. Frick, and G. A. Frick, substituted for defendants impleaded as Nutting, Cooper, Frick and Frick; and the Superintendents, agents, officers, servants, and employés of the foregoing defendants, and each of them, be, and they are each of them hereby, perpetually enjoined and restrained from using the bed of Bear River, or the beds of any or either of its tributaries, ravines, or gulches, as a place of deposit, or as a dump or place of discharge for the tailings or *débris* of their said mines or mining claims or either of them, and especially from using said beds of said stream or either of them as a place of deposit of the tailings from those mining claims known as the Empire, Christmas Hill, Council Hill, Liberty Hill, Yankee Badger, Jehosaphat, Central Red Dog, Wallapa, Neece & West, Franklin, Polar Star, Buck-Eye, American, Elmore Hill, Chalk Bluff, Pine Tops, Somerset, Le Kamp, North Star, Sailor, Boston, Doolittle, Hussey, Gouge Eye, Quaker Hill, Rhode Island, Remington Hill, Wyck Bros.' claim, Lowell Hill, Swamp Angel, Pleasant or Mount Pleasant, and especially from continuing to use their present dumps as a place for the discharge and deposit of the tailings or *débris* from said mines; and they and each of said defendants are further hereby perpetually restrained and prohibited from fouling and corrupting the water of Bear River, and its branches, tributaries, streams, ravines, and gulches, with tailings or *débris*

from their said mines, or either of them; that the plaintiff herein recover his costs of this suit taxed at $——— against the foregoing-named defendants, except the Gold Run Ditch and Mining Co.: that the defendant, A. G. Turner, having disclaimed the complaint of plaintiff as to him, is hereby dismissed, but without cost to either party.

Done at chambers, this 10th day of March, A.D. 1879.

PHIL. W. KEYSER, District Judge.

SAN JUAN SILVER MINES.

Special Correspondence of the Engineering and Mining Journal.

Reaching Ouray from Imogene Basin about noon to-day (March 10th, 1879), as soon as I entered the post-office, I noticed displayed on a box near the door a block, some 75 pounds in weight, of nearly solid gray copper; it was associated with copper pyrites, quartz, and quartz crystals, and some little quartzite, which latter was stained in places with the bright blue and green of the carbonates of copper. The green I should call a verdigris-green, and the blue a smalt-blue. I recognized it at once as Trout or Fisherman ore, and, on inquiry, found that the former was being worked under lease, and that the lessees had "struck it rich," in fact, were quarrying this magnificent ore in big blocks from a point or bluff of rocks which overhangs Cañon Creek where the vein crosses it, and within the town limits.

The Trout and Fisherman being the first two mines discovered here, and the ones which gave being to Ouray, I deem them worthy of a short description. In the autumn of 1875, Mr. Ed. McIntyre, now a resident of Ouray, was prospecting up at Mineral Point, some 3500 feet higher than our camp, when two miners came to him for a "grub-stake" to go prospecting. He outfitted them, with the usual understanding that they were to stake him in, and they started down the then almost unpassable gorge of the Uncompahgre, and went on till they reached the beautiful little valley where now stands our town. They were prospecting for gold placers, and amused themselves "between times" by catching a few of the bright speckled beauties with which our streams abound. About 150 yards above, where Cañon Creek and the Uncompahgre join one another, they were thus busy with rod and line when one of them noticed, on the bank of the creek, an outcrop of quartz, stained bright blue and green, as mentioned above, and, breaking off a piece of the quartz, gray copper, the *ultima thule* of our miners, was exposed to view. They then crossed the creek and found the vein, as they supposed, on the other side, and staked two claims, each from the creek upward, and called them, apropos of their employment at time of discovery, the Trout and Fisherman.

Since then, however, they have been found to be two separate veins which intersect one another in the bed of the creek at the point of discovery. The claims, as now staked, are 1500 × 300 feet each. I believe the extension of the Trout in a northeasterly direction has not been found; but that the Fisherman has been traced in a southwesterly direction beyond where now claimed. Since the time of discovery, both these mines have been worked under several leases; or, rather, I should say, several parties have taken leases on them, and each seems to have picked and "gophered" away at them as long as a pocket of the rich ore lasted, and no longer. Stranger still, no one seems to have made it pay, with the exception, I believe, of the Reed Brothers. But this, I firmly believe, is entirely owing to mismanagement, and no fault of the mines. Considering the number of men that have worked them, the amount of development they show is somewhat amusing. On the Trout, a level run in from the creek on the vein about 40 feet; higher up on the claim, a shaft down about 50 feet; from this, 25 feet below the surface, another level about 60 feet in length. On the Fisherman, a tunnel started into the bluff from the creek, about ten feet in; a shaft from the creek level about 20 feet down; and from that, a level about 30 feet in length.

The two original discoverers sold out their interest last year to some parties in Cleveland, and the property is now owned by them and by Mr. Ed. McIntyre.

In the autumn of 1876, the Reed Brothers, civil engineers from Boston, Mass., and who are now working a mine in Imogene Basin near us, had a short lease on the Fisherman. They worked it where it outcrops, and simply bench-stoped the ore, putting in long shots, and sometimes throwing upward of a thousand pounds of the glittering stuff at once, which ran at the mill—1st class 804 ounces, 2d class 300 to 450 ounces to the ton, and the dump which they left behind them would, if one had a concentrator on the spot, pay largely. That fall the Trout was worked by Messrs. Renfroe & Gooding, who, I believe, did not make much out of it. Since then a shaft was sunk on the Fisherman about 20 feet, and a level run from it; but, being below the creek-bed, and having no pumping-machinery, the water stopped operations. I am informed, however, that both shaft and level were in good ore all the way.

Just above where the Fisherman was first discovered and worked, the quartzite seems to be capped by a stratum of red sandstone; and in the upper workings, after running in ten feet, this stratum, which has a downward pitch of about 15 degrees, seems to have cut off the vein. Between the sand-stone and quartzite there was a thin layer of conglomerate (breccia), the compacted pieces of rock seeming to me to be of many colors and varieties—quartz, granite, limestone.

The breast of the lower level on the Trout shows no ore; but the streak shows in the roof near the entrance, on the surface, a few feet above where the present lessees are working it; and there is also a good ore-body to be seen in the shaft and level higher up on the claim. The ores from these two mines resemble one another very closely, and are very similar to some of the ore from the Begole "Mineral Farm," which I described in your paper not long ago, and which is situated about a mile from the former, in a southeasterly direction, and on the same mountain (Hayden Mountain). It comprises gray copper, copper pyrites, iron pyrites, some galena, and quantities of the earthy blue and green carbonates or arseniates of copper (can not say which, not having tested them). The gray copper ore is all of the same high grade, and can be sorted to run 600 ounces, while specimen assays of the gray copper run from 1500 to 2000 ounces to the ton. So far, the ore has been found in pockets and "frozen" to the walls, if walls they are. So much for past history. W. W.

The Pomeroy rolling-mill, which has been idle for some time, is to be sold at an early day to satisfy the mortgages on it.

PROGRESS IN SCIENCE AND THE ARTS.

General Science.

A Portable Electric Light apparatus was recently exhibited at the Paris Cattle and Implement Show, held in the Palais de l'Industrie and adjoining grounds. It is designed to enable harvesting operations to be carried on at night, to anticipate a coming storm. The lamp is borne upon the top of a spar made of wrought-iron tubing, and can be shifted or inclined or raised and lowered as may be convenient. The whole contrivance is mounted on a portable locomotive-engine, that may be used for running a threshing-machine or for other agricultural operations at the same time. The apparatus will be found illustrated and described in detail in the current issue of London *Iron*.

A New Electric Current Regulator, based on the heating of a wire by the passage of a current through it, has been devised by Dr. C. W. Siemens, and described at a late meeting of the Physical Society (London). A full description will be found in *Nature* of March 6th.

The Completion of the Observations of the zone assigned to the Harvard College Observatory in the revision of the *Durchmusterung* of Argelander, was announced to the American Academy at its recent session by Prof. Pickering. The stars are included between 49° 50′ and 55° 10′ N., and they number over 8000. This work has been continued during the past eight years by Prof. W. A. Rogers.

Current Scientific Literature.—In the *Monthly Journal of Science* (London), among other matters of value, we find the following articles: "The Keys of Death" (editorial), discussing the nature of poisons; a curious thermo-magnetic motor (Houston and Thomson), already noticed in our PROGRESS column; "The Heat of the Comstock Mines" (Church), published in this journal; "Electrical Insulation in High Vacua (Crookes), and the usual interesting summary of scientific and technical progress. The *Popular Science Monthly* for April has a good biographical sketch of John Stuart Mill; "Intra-Mercurial Planets" (Flammarion); "New Guinea and its Inhabitants" (Wallace), and an interesting paper entitled, "Shall We Adopt the Metric System?" besides the usual editorial bibliographical, and news columns. The *American Naturalist* (April): "Animal Music—its Nature and Origin" (Clark); "Native Bitumens and the Pitch Lake of Trinidad" (Crosby), and "Notes on an Extensive Deposit of Obsidian in the Yellowstone National Park" (Holmes). The departments are full of interesting news. The *Franklin Institute Journal* (March) has a valuable article by J. Richards on Gauging and Measuring Implements, and one on Graphic Freight Diagrams (Dudley). The department of items and novelties is as full and varied as usual.

Mining, Metallurgy, and Geology.

The Nature of Eozoon.—Dr. Dawson, in a reply to Möbius, which appears in the current issue of the *American Journal of Science and Arts*, takes exception to his arguments and reasons for pronouncing the *eozoön* to be of mineral origin, and reaffirms his belief that it represents the fossilized remains of an organic being. He (Dawson) asserts that Möbius has misinterpreted the characters of his specimens in several important particulars; as, for instance, in mistaking the veins of crysolite that traverse the serpentine and calcite for the walls of the *eozoön* chambers. Again, Dawson meets the objection of Möbius that the large (so-called) tubules are irregular and unsymmetrical, by urging that such irregularities can be satisfactorily accounted for as the effect of pressure and other physical incidents of fossilization; while the regular round and branching tubules which Möbius is disposed to regard as accidental, Dawson affirms to be in reality the normal structure of the organism. So far, therefore, from being settled, the question of the nature of *eozoön* is still a debatable one, with the weight of evidence probably slightly in favor of the view advocated by Dawson.

The Hypothesis of a One-Time Igneous Fluidity of the earth was combated in a paper lately read before the French Academy by M. Hermite, entitled "The Unity of Forces in Geology." He would explain the present form of the earth by the presence and action of its seas, and denies that we are justified in assuming the existence of central fires or even of extensive seas of lava, from the phenomena of volcanoes. For the paper *in extenso*, see the *Comptes Rendus* of March 3d.

The American Institute of Mining Engineers, on Wednesday, March 26th, formally transferred its valuable collection of ores, minerals, and metallurgical products to the custody of the Pennsylvania Museum and School of Industrial Art.

A Coal-Cutting Machine devised by Mr. J. W. Harrison, has lately been brought to the notice of coal operators. According to description "it will cut 240 feet face to the depth of 4½ feet in ten hours. The 'poling in' at the faces is seven inches high, and one inch at the back. One small-sized air compressor will run at least 6 of these machines. It requires no track, is easily handled by one man, will work in hard or soft coal, and weighs only 240 pounds." We learn that it is in use at the Morris Run (Pa.) mine, the superintendent of which reports well of its performances.

A Flowing Oil-Well is reported to have been struck near Heide in Holstein, as a result of an experimental boring. The *Polytechnische Zeitung* affirms that the product is in all respects equal to the American petroleum.

Africa has been crossed again, this time by the Portuguese explorer Pinto, from whom the Portuguese Minister of Marine reports the receipt of information that he has safely reached the Transvaal.

The Peckham Direct Process is being tested in an experimental plant lately established for the purpose at Kimmswick, Mo. For a full description of the *modus operandi*, and of the nature of the results obtained, we refer our readers to *The Iron Age* of March 27th.

Geological Survey of the Territories.—Hayden's work during 1878 is narrated in brief in the *American Naturalist*, from which we condense the following: The region specially examined was the Yellowstone Rock and its surroundings, and the Wind River Range and Snake River country, the work being divided among four parties. One of them extended the primary triangulation northward over about 12,000 square miles. Mate-

rials were collected for a topographical map of the Yellowstone National Park (one mile to one inch), the object of the re-survey being to bring it under the system of triangulation so successfully used in Colorado, and to make the entire work uniform. All the old hot spring basins were re-surveyed and mapped, and soundings and temperature measurements were made of several thousand hot springs. The action of the geysers was carefully studied, as was also the geology of the entire region. Fremont's Peak, in the Wind River range, was ascertained to be 14,000 feet high, and three glaciers were discovered on the east side of the Wind River Mountains.

Chemistry, Physics, and Technology.

In the Solvay Ammonia Process for Soda Manufacture, the usual procedure appears to be to treat the chloride of ammonium (resulting from the reaction of common salt with ammonium bicarbonate) with caustic lime, and to distill off the ammonia, which serves then to form a fresh quantity of ammonium bicarbonate for a new operation. The resulting waste product is chloride of calcium, which is formed in considerable quantities, and which is commonly thrown away as useless, having thus far received but little application in the useful arts or manufactures. Herr Gluge, of Saarbrück, in noticing with satisfaction the rapid development of the ammonia soda process, remarks, in a brief contribution to the *Chemical News*, that it is specially desirable that men of science and manufacturers should turn their attention to the task of utilizing this substance, that can be supplied so very cheaply and in any quantity. The manufacturers of ammonia soda could supply it in solution, in crystals, or fused, as might be desired.

From this it would appear that the attempt of Solvay to employ magnesia, in place of lime, for the revivification of the ammonia salt, has been unsuccessful. If magnesia could be used in place of lime for this purpose, there should be no waste product, as the resulting magnesium chloride can be decomposed by simple heating, and the resulting magnesia used for a fresh operation, and so on indefinitely. Beyond the mere suggestion of its use for this purpose, to which we alluded some time since when writing upon this topic, we have seen nothing to tell us whether this substance has been seriously experimented with.

The Occurrence of the rare elements, cerium, lanthanium, and didymium, though in minute quantities, appears to have been demonstrated by Professor Cossa to be far more frequent than was generally supposed. He finds them in bones and in the ashes of plants, and in many minerals, such as apalite, Carrara marble, scheelite.

The Absorption Spectra of didymium and of some other substances extracted from the mineral samarskite, indicate, according to Soret, the presence of a substance at least different from didymium. It appears also to be present in much less quantity in the didymium from cerite. This observation is confirmatory of that of Delafontaine, referred to in our PROGRESS column.

Celloidin, an explosive and not readily inflammable form of vitro-cellulose, and which is recommended as a useful substitute for gun-cotton in photography and pharmacy, has lately been placed upon the market by the well-known chemical works of E. Schering, of Berlin. It is put up in the form of plates, and when ignited burns slowly like paper, or chars. Its transportation by mail, wagon, or railway is therefore affirmed to be attended with no risk. It is soluble in a mixture of alcohol and ether in all proportions, yielding a clear solution without residuum. The *Schweiz. Wochenschr. für Pharm.* (1879, 20), which is our authority for the foregoing statement, is of opinion that celloidin is produced by slightly moistening a special kind of gun-cotton with a mixture of alcohol and ether. This treatment, by partially dissolving or gelatinizing a portion of the fibers, permits the whole mass to be pressed into the solid plates spoken of above.

An Ingenious Method of Mending Broken Castings is thus described: To insure its success, it is necessary that the parts to be reunited should be broken entirely across, so that the two parts shall be independent. It consists in heating the two pieces together by a stream of molten cast-iron until the surfaces of the fracture and the parts immediately adjacent to it commence to melt. Exactly at this point, the flow of cast-iron should be stopped, when the softened surfaces left behind will unite in chilling, and if the operation has been properly conducted, the new seam will be quite as strong as any other part of the piece. It is obvious, in addition to the precaution above named, that the melting should extend over the whole of the fractured surfaces, and that to prevent the actual running down of the pieces, the thickness of the casting must not be too small.

Phosphorescent Paper is reported to be one of the latest novelties. Writing done upon it can be read in the dark.

The Use of Chloride of Calcium has been suggested by Prof. Thaler to be driven against the walls of coal mines in form of spray, to fix the dust (it being a deliquescent substance), and thus to reduce the liability of dust explosions.

Engineering, Mechanics, and Miscellaneous.

Telegraphic Items.—The report comes from London that the British government has decided upon the immediate construction of a submarine telegraph to South Africa, having accepted the tender of the Eastern Telegraph Co. The route is by way of Aden, Zanzibar, Mozambique, Delagoa Bay, and Natal. It will connect with the whole of the Eastern system of telegraph. From the same source we learn that the subterranean lines in Germany, to which we have several times referred, are attaining vast dimensions, and that the Reichstag has just voted $450,000 for further extensions.

The East River Bridge.—The recent decision affirming the liability of New York for additional funds to insure the completion of the bridge, is admitted to definitely settle the question of its rapid completion. It is now reported that work is to be recommenced on it at once. The President of the Board of Trustees is reported to have stated that the completion of the structure has been delayed a year by the New York legal complication just disposed of.

A New Mode of Heating Passenger Trains, said to be the device of one of the employés in the Altoona shops, is reported to have received the approval of the Pennsylvania Railroad Company, by which it will probably be generally introduced. The device, briefly described, consists of a boiler placed in the baggage-car, from which a constant current of hot water is pumped, and forced to circulate through pipes suitably arranged in the passenger cars, when it is returned again to the boiler.

Railway Notes.—To date of March 28th, the *Railroad Gazette* reports the construction of 241 miles of new railroad in the United States during the current year.——Of railway projects, the most interesting, perhaps, on the carpet is the statement that the New York, Pittsburg & Chicago Railroad Co. proposes to build a narrow-gauge line from New York to Chicago, with branches to St. Louis and Toledo.——Minnesota has projected no less than 440 miles of new road, nearly all of which it is proposed to build during the present year.——The contractors for the iron work of the Harlem Extension of the Metropolitan Elevated RR. in New York, are now delivering about 1000 tons of finished iron-work per week. ——There is one man in the country, at least, who is profoundly convinced that the era of hard times has passed, and that is Mr. Oliver Garrison, Vice-President of the Missouri Pacific RR. Co., who is reported in the Cincinnati *Enquirer* to have made the startling statement that "Twelve thousand miles of new railroad are in sight now, to be built next summer." When it is remembered, however, that in 1871, the flush year—in which railroad construction reached its maximum in the United States—only 7779 miles of new road were constructed, Mr. Garrison must be seriously suspected of having permitted his imagination to get the better of his judgment.——The *Railroad Gazette* takes the management of the New York Elevated Railroad severely to task for the accident that lately took place at the junction of its Third avenue line with the Forty-second street branch. Our contemporary, referring to the cause of the accident—a misplaced switch—fixes the entire responsibility upon the management for not providing against the neglect or inadvertence of its employés, by the adoption of "the interlocking system of switches and signals, which provides an absolute safeguard against the mistakes of switchmen."

An American "World's Fair" in 1889.—In addition to our former references to the project of holding an international exhibition in 1889 in New York, we may notice the fact that an Executive Committee to arrange preliminaries and decide upon a location and plan of organization was lately held in this city. This committee comprised the names of about a dozen of the leading citizens of New York, a fact which lends an air of probability to the belief that the effort will be seriously made to bring the exhibition about.

A New Coast-Line Extension is said to be projected by the Pennsylvania Railroad Company, which, if completed, will result in taking away from the New Jersey Central road the exclusive control of that desirable portion of the Jersey coast lying between Squan on the south and Sandy Hook on the north, and which is dotted with numerous and growing summer resorts. Heretofore the Pennsylvania road has been able to bring passengers to Long Branch and adjacent places by using the lines of a short branch, which it could command through the leased line known as the Freehold & Jamesburg Agricultural Railroad. This road the Pennsylvania Company now proposes to extend to Long Branch, which will secure to it an independent line, belting the Jersey coast, and dissecting quite a number of new summer settlements. The engineers of the company are now engaged in making the surveys.

The Much-Talked-of Vesuvian Railway, it is believed, will be finished and come into use during the present year, the Italian government having granted the concession for its construction. It is to be laid along a route which the experience of many years has shown to be the least exposed to danger from the eruptions of the volcano.

The Possible Displacement of Wooden Railway Cars by cars of iron is discussed in a recent issue of the *Railroad Gazette*, and our contemporary shows that a comparison on the score of economy, based on relative cost and endurance of the two kinds of rolling stock, is in favor of iron.

Paper vs. Iron Car-Wheels.—The *Chicago Railway Review*, basing its conclusions mainly upon data vouched for by the Pullman Car Company, asserts that while the average running duty of an ordinary iron car-wheel is about 75,000 miles, that of a paper wheel with steel tire, is from 450,000 to 550,000 miles.

COKE FROM GUNNISON, COLO.

Prof. Richardson, of the Gunnison valley, brought to the School of Mines, recently, a small sample of coke, made from the refuse coal of the Mt. Carbon mine, a five-foot vein, with a 500-foot tunnel, entries, etc. The coke was tested by E. B. Krausse, under the direction of Prof. Moss, and found to contain the following per centums:

Carbon	39.0
Hydrogen, nitrogen, and oxygen	2.5
Ash	8.5

The specimen analyzed contained no appreciable amount of moisture, was unusually firm, and presented a metallic luster. The Gunnison coal-beds are 164 miles from Golden, on the proposed extension of the Colorado Central. Ash from the Gunnison coke is of a rich chocolate color, indicating ferruginous shale as an element in the coal.—*Colorado Transcript.*

UTAH MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

The Telegraph mine, at Bingham Cañon, is producing as usual, its shipments being from 100 to 120 tons of ore daily, a part of which is sold upon the market, and the remainder is reduced at the company's works, on the Jordan River. The mine is working about two thirds its usual quota of men. The ore is divided into two classes. All that carrying over 30 per cent lead is classed as smelting ores, and shipped directly to the furnaces or to the market. All ores giving between 15 and 30 per cent lead are shipped directly to the leaching works, where they are crushed by Cornish rollers, and leached until all the chloride is extracted; after leaching, the ore is carried to revolving screens connected with three jigs, where it is sized, and the tailings from the jigs are then crushed by a battery of twenty stamps and run over four revolving tables, where

the waste is taken out and the ore is saved in a fine and very clear state. Thus two classes of ore are made in the concentrating works: One, called jigged ore, carrying from 45 to 55 per cent of lead and from 15 to 26 ounces of silver per ton; while the table ores carry from 48 to 55 per per cent lead and from 18 to 32 ounces of silver per ton, and $4 gold.

The sulphides of silver which are obtained from the leaching works are mixed with certain preparations of lime and fine table ores, molded into bricks, and then smelted with the ordinary silver lead ores. The sulphides of silver vary in richness from three thousand to ten thousand ounces of silver per ton.

It is rumored that the management of this great mine, which has been and is the largest producing argentiferous lead mine in Utah, is soon to pass under the control of a French company, and that extensive works for the reduction of silver ores are to be erected on the Jordan River, and that the bullion for the present season will be shipped directly to Europe.

ANOTHER UTAH WILD-CAT.

An attractive advertisement appears in *Frank Leslie's Illustrated Newspaper* of February 22d, February 29th, and March 8th, running as follows:

"Forty miles from Salt Lake City, and one mile from the railroad, is located the noted 'Argent' silver-bearing lode, the ore from which assays from $3 to $5 in gold, about 50 per cent lead, and $30 to $136 per ton of silver. Directors are all sound business men. Stock is unassessable. Send for prospectus. Norris Silver Mining Co., Kansas City, Mo."

The above advertisement is unquestionably a fraud. There is no silver mine or company of that name operating in Utah. We have made diligent inquiry, and can find neither a trace nor color of such a mine or company. The sooner this matter is ventilated, the better it will be for the mining interests of the entire country. ARCHIBALD.

MONTANA MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

The Snake and Salmon River mining countries, Idaho, seem to be objective points for the "stampeders" this spring. Nevada and Utah miners have the fever bad, and Montana miners are catching it. The rush will commence in April, and will be very heavy. There is room for a large number, but the outfit of electro-silver plates, to save the fine gold of this region, is expensive, costing in the neighborhood of $1200. The expense of the outfit will tend to throw the mining into the hands of a few.

T. H. Kleinschmidt, Assistant Cashier of the First National Bank, Helena, has the finest collection of native gold crystals in the United States. They are all Montana specimens, and are the result of many years spent in collecting. The collection was on exhibition at the Centennial, and was awarded the highest medal.

For the week ending March 10th, there was shipped from Butte to the Utah & Northern terminus 1803 lbs. silver bullion, valued at $16,135, and 345 lbs. silver retort to the U. S. Assay Office, Helena.

Discoveries reported "rich" have been made in the mountains south and east of Deer Lodge this winter, and many leads have been located. But as no reliable assays have been made, it is impossible to state whether this district is all that is claimed for it or not.

Work has been resumed by Messrs. Nolan & Savery in the old Cable mine, after a number of years' idleness. The Cameron tunnel is being extended to the lode, from which it is now distant 500 feet; its length at present is 650 feet. It will strike the lode 90 feet below present workings. A prospecting drift was run, following the lode 30 feet below the surface, from a point where it was discontinued some years ago, and had only advanced four feet when a large body of high-grade free-milling ore was discovered. There are about 100 tons of this ore in sight, and it is represented to be worth $80 per ton on the average.

Tunneling and sinking is still going on in the Penobscot, and the ore is said to be of its average width and richness as they go down. About 100 miners are given employment at this mine. Both walls have been found in the Black Hawk, an extension of the Penobscot. The vein is four feet wide.

Walker Bros. have just purchased at Salt Lake a pair of 54-inch boilers (160 horse-power) and all fixtures complete, for the Alice mill, to take the place of those now in use.

The Hecla Company, Glendale, started their large furnace to work about the 1st of March, but after a run of three days it "froze," which involved a delay of some days. Four silver bars, weighing about 400 lbs., was the week's work. Enough ore is on hand for a thirty days' run, and they are receiving thirty to forty tons of 100-oz. ore per day.

TUBEROSE.

GENERAL MINING NEWS.

CALIFORNIA.

THE BODIE DISTRICT.

From all accounts this district is "booming." The *Standard* of March 22d, in its summary of the situation, observes: "The past week has been the most eventful one thus far this spring, caused by the rich strike in the Bechtel and the continued improvement in the Black Hawk. Both mines have admitted a constant stream of visitors, and the expression is universal that each will prove a valuable mine. The Bechtel, since its consolidation with the Sitting Bull, is divided into 100,000 shares; and at the rate of $2.50 per share, which was the selling price Saturday afternoon, would be valued at $250,000. The Black Hawk, whose capital stock consists of 50,000 shares, and which was at the same time quoted at $4, would at that rate be worth $200,000. The present appearance of the two mines fully justifies these figures. The deadness of the Comstock at present is favorable to a heavy investment in meritorious mines and active stocks. Many of the Pioche stocks, a few years ago, with less merit, sold for $20, $30, and $40 per share. Many heavy capitalists are now investing in Bodie. The Bechtel has commenced to haul ore to the Syndicate mill. The mill, after its six months' steady run on Bodie rock, is being overhauled, and will commence running about the 25th instant. The Noonday ore, which is now at the mill, will possibly be worked at another mill. Among the developments of the week was the strike of a rich three-foot ledge on the 380-foot level in the Bulwer mine—it being presumably the Stonewall. The Bulwer crushing is turning out splendidly. The second bar of bullion has been shipped, worth over $16,000, with 600 ounces of bullion carried over to the next melting. In the Tioga the ledge in the north drift from the east cross-cut of the 320-foot level is looking first-rate, being two feet wide of good milling ore. A strike of importance has been made in the claim called the United, situated east of the Black Hawk. The ledge is four feet wide, and contains exceedingly rich ore, some of which would go into the hundreds of dollars. A strike was made in the Acme, a claim on the southwestern slope of Silver Hill, of a two-foot ledge which looks very promising."

EFFECT OF THE MINING DÉBRIS DECISION ON HYDRAULIC MINING.—The *Stock Report* says:

"On March 24th, the Directors of the Watt Mine held a meeting at San Francisco, and decided to suspend operations. This determination is said to be on account of the recent decision of the *débris* case, the uncertain tenure of mining property, and the liability of directors of mining and other corporations engrafted on the proposed new constitution of California."

COLORADO.

TIN-CUP.

According to the Chicago *Tribune*, two of a party of miners brought from the Gunnison this winter 600 lbs. of ore, which assayed over 2000 oz. of silver to the ton. It it said that very rich ore has been found there in true fissure-veins, and it is thought that, as soon as it is possible for prospectors to get there, there will be quite a rush. It is also said that there are very extensive beds of coal there. Prof. Richardson, who has been a resident of Gunnison for several years, advises prospectors to take with them several months' provisions and supplies or money to enable them to carry on their prospecting. Although speaking favorably of the district, he discourages the immigration of prospectors who have no capital.

LEADVILLE.

This camp is about as exciting as is necessary. A very free use is made of revolvers, and an occasional fatal shot is the result. Building is going on at a very rapid rate, and although many of the structures are of rather a temporary character, yet there are some very substantial buildings being erected. The Clarendon Hotel, containing 78 sleeping-rooms, was to have been thrown open on the 1st inst. The dining-room will have a capacity for seating 96 persons. The charges per day will be $4. Hay is selling at $110@$140 per ton. As much as $100 per ton has been asked for freight, between Leadville and Webster. Although the town is greatly overcrowded, yet immigration has not abated. Gold-bearing quartz assaying very high has been found in California Gulch, about two miles above the town. The Bruce iron mine has been sold for $60,000. There are about 500 tons of ore being mined per day at Leadville, and yet the mines are not being actively worked, as it is considered much more profitable to hold the ore until the railroad is completed. The Denver *Tribune* states that 22 high waymen who have been operating in the Black Hills have reached Leadville and are preparing to rob the expresses and passengers bound to and from that place. The Robert Emmet has made a large strike of sand carbonates. Ten Mile is the attraction for the surplus of Leadville. A Denver *Tribune* correspondent, under date of March 28th, gave the number of buildings in Leadville as 2742, accommodating at least 15,000 people, with the population increasing at the rate of 100 per day.

A dispatch to the Denver *Tribune*, dated Pueblo, March 26th, says: "Four miles of the Leadville extension of the Atchison, Topeka & Santa Fé Railroad, west of Cañon City, were completed to-night. The track is now laid a distance of one mile and a half in the grand cañon of the Arkansas. The work is being pushed forward rapidly, and the Royal Gorge will be reached by Saturday night. Large quantities of rails and ties are going to the front daily, and Leadville will have railway connection with the outside world, by way of nature's great route, the Arkansas Valley, at an early day."

The Colorado Springs *Gazette* announces what appears to be a fairly important discovery of silver ore in the Pike's Peak District. Already about two miles of the lode have been staked off.

Near Granite, close to which Cache Creek empties into the Arkansas River, rich carbonates in large quantities are reported to have been found.

THE DUNDERBERG MINE.

The Georgetown *Courier* of March 27th, 1879, says of this property:

"Forty-five men are at present employed in this mine, which has been regularly improving in appearance, and increasing its monthly output as developments have progressed, and at no time in its history has it looked better than at present. The main shaft is now 90 feet below the tunnel level, and 260 feet below the surface. A level is being pushed both east and west from the bottom of this shaft, it being now in 27 feet east and 15 feet west of the shaft. The bottom of the shaft and level shows a vein of solid ore, composed of galena and blende, carrying a large percentage of gray copper, 14 inches in thickness, that mills from 250 to 300 ounces dressed into one class. East of the shaft the stope shows a vein of ore from eight to twelve inches in thickness, and west of the shaft the ore-vein will average about 6 inches in thickness. This shaft shows ore its entire depth, in places over a foot in thickness. On the west side, at a depth of 45 feet, a level has been started that shows from 4 to 8 inches of ore, that carries large quantities of gray copper and ruby. The last lot milled from this place gave 1159 ounces first class, 431 ounces second class, and 159 ounces third class.

"The main level, or tunnel level, is now in about 290 feet, and shows in its breast a large vein of quartz and a vein of solid ore about five inches thick, that averages, dressed into one class, about two hundred ounces. The first stope over the main level shows from four to six inches of ore that mills from 500 to 600 ounces first class, and from 225 to 250 ounces second class. In the upper stope, about 80 feet above the main level, a party of lessees are stoping on an ore-vein from five to six inches thick, that mills from 175 to 500 ounces.

"The Peterson level enters the hill to the west of the entrance to the main level, and about fifty feet deeper than to the bottom of the main shaft. This drift shows a six-inch vein of ore similar to that in the main workings."

The Boulder *News* of March 28th says: "A body of ore was recently struck in the Dunderberg mine, immediately adjoining the Terrible mine, on Brown Mountain, near Georgetown, that for quality and size promises to exceed the former product of this mine, which has already realized fortunes for the owners and lessees. This streak, struck at the depth of 250 feet from the surface, is two feet in width, and containing, as it does, a large amount of gray copper and ruby silver, will run from 1800 to 2000 ounces of silver per ton."

DAKOTA.

The superintendent of the Homestake mine writes that "the new 120-stamp mill will probably be completed about the 15th of June." This will make 200 stamps which this company will have running then.

GEORGIA.

A. H. Hand, superintendent of the Findley mine, under date of March 29th, says: "I am happy to report an increase of gold for week—both mills say 102 oz.; last week the amount was 89½ oz. Whole gold for March, 347 oz. amalgam. We think the ore looks better than ever."

IDAHO.

THE FLORIDA MOUNTAIN MINES.

The Silver City *Avalanche* of the 15th ult. says of these mines: "The Florida mountain mines are all looking well, with every prospect of turning out largely the coming season. There is a force of fifteen men employed at the Hastings mine. The vein shows up splendidly, and a considerable quantity of rock is being shipped to the mill, the roads being in tolerably fair condition.

"A limited force has been employed at the Potosi recently. There is considerable ore awaiting shipment to the mill.

"The Morning Star mine is holding its own and yielding some of the best ore

that has been seen here for a long time. There is a force of about twelve men working on night and day shifts.

"At the Trook and Jennings the ledge continues to wear a very promising look.

"Work is progressing as usual at the Belle Peck.

"We have very favorable reports from the operations of the Owyhee mine; the ledge has all the characteristics of an immense bonanza, the rock being similar to that produced in the palmy days of the Poorman, near by. A considerable quantity of rich ore is being forwarded to the arastra for crushing.

"The Leviathan is looking well. There is every indication that the mine will turn out to be one of the best on Florida Mountain."

The Bonaparte gold mine, situated seven miles from Rocky Bar, is reported to have made a very valuable strike recently. This property is principally owned by Cincinnati capitalists.

KANSAS.

A correspondent of the Chicago *Inter-Ocean*, writing from El Dorado, Kan., under date of March 22d, says:

"Gold quartz rock has recently been discovered at Little Dutch, thirty miles south of this place. The rock is twenty-two feet beneath the surface of the soil. The assays show it to be very rich, one assay showing $236,000 to the ton of rock; $2000 to the ton is what the lowest assay shows. * * * *

"'The Gold Ore Mining Company, of Kansas,' has been organized with a capital of $16,000,000 to begin with."

This is a very attractive statement to the prospector; but such as are on their way to Colorado and the producing States and territories will do well not to change their course until reliable expert testimony is received on this discovery.

MONTANA.

THE CABLE DISTRICT.

From the Butte *Miner* of March 20th we take the following:

"Work has been resumed in the Cameron tunnel in this mine with the intention of extending this adit to the lode, from which it is now distant 500 feet. The present length of the tunnel is 650. It will reach the lode 90 feet below the lowest workings. In running a prospecting drift, following the lode, 30 feet from the surface, recently, a body of high-grade, free-milling ore was reached. At present over one hundred tons of this ore are in sight, with no appearance of its giving out. The total expense of mining and milling it will be less than $5 per ton; but since it carries an average of $30 per ton, the value of the strike can readily be comprehended. A great revival of mining in the Cable District is looked forward to."

GLENDALE.

The same paper observes:

"Last week the Hecla Company turned out four fine silver bricks, weighing in all some four hundred pounds. There is now on hand ore enough for a continuous run of thirty days with the large furnace, and in addition the company is receiving from thirty to forty tons per day of 100-ounce ore."

NEVADA.

THE RENO DISTRICT.

The Reno *Gazette* says: "Under the new management, work on the Con. Esmeralda is being pushed with renewed vigor. The main shaft from the 100-foot level is being sunk large enough for a double compartment. Although the shaft is 60 feet east of the ore-vein, which was passed through at the 50-foot level, it is still in ore which assays from $16 to $60 per ton, and the percentage of gold increases as depth is attained. This company is not milling any ore at present, nor has it done any stoping yet. The five or six hundred tons of high-grade ore now on the dump were taken out in sinking the shaft and drifting on the vein. We are informed by the superintendent that no stoping will be done until the company gets a mill erected. The shaft in the Crystal, a short distance east of the Con. Esmeralda, is down 35 feet, showing good ore all the way from the surface. In the Mountain View, half a mile southwest of the Con. Esmeralda, they have struck a body of sulphuret ore which assays $450 per ton."

STRIKE IN THE ALEXANDER MINE.

The Grantsville *Sun* says:

"A valuable discovery has been made in the lower south tunnel of the Alexander mine. At a depth of 244 feet, a ledge of sulphuret has been discovered. The ledge has been prospected for seven feet, and as yet no signs of a foot-wall have been disclosed. The ore hitherto encountered in all the upper levels has been gray chloride and carbonate; at this point, however, the ore-body undergoes a complete metamorphosis, and is changed to a heavy black sulphuret. The ore from this ledge assays from $40 to $380 per ton. In a short time they will commence to mill this; then look out for heavy bullion shipments.

"Through a private source, we learn that 14 feet have been cut into the ledge in the tunnels referred to; showing sulphuret ore of a high grade, with no signs of a hanging-wall."

The Mutual mine, in Mount Rose District, has been sold to San Francisco men for $35,000. The *Silver State* is informed that work will be commenced on the mine on an extensive scale shortly.

THE EUREKA DISTRICT.

We are indebted to the *Ruby Hill Mining Report* for the principal items which follow:

"Our mines were never in better condition for inspection than they are at present, as they have been diligently prospected for a number of years, and the owners have run drifts, sunk shafts, etc., until the course of the veins is well defined and easily traced. Also the very regular bullion shipments which have rolled out of the camp for the past ten years have at last commanded due attention, and those seeking paying investments are irresistibly drawn to the solid appearance which our district presents. Many of the mines on which our Eastern friends have expended thousands of dollars, we are glad to say, are at this writing, opened up in the best possible manner, and the indications are that they will, ere long, reap a handsome profit on the money invested.

"The report of the recent strike of a large body of fine ore in the Richmond will be hailed with delight by the stockholders across the ocean, while those nearer home will be no less pleased at the present showing in the Eureka Consolidated. The K K is not behind in point of showing, and commenced last Sunday to hoist some very fine ore. The ledge in the Williamsburg is evidently widening, and the quality of the ore about $250 to $305 per ton. The Kit Carson shaft is going down rapidly, and shows several tons of fine ore on the dump. The contractors in the Metamoras are confident of striking a vein of high-grade ore in less than 50 feet, and the Silver Connor commenced shipping $85 ore this week. Thus it will be seen that we have just cause for rejoicing at the flattering appearance of the mining outlook."

The trouble between the Atlas Company and the English Company has been settled by the latter paying Captain John E. Plater $75,000. This settles a long dispute, and hopes are entertained that work will be resumed on the company's claim at an early day.

The Metamoras Company is smelting thirty-five tons of ore, mostly Jackson, per day, which produces an average of seven and a half tons of bullion. This company consumes 30,000 bushels of coal per month.

Excavations have been made under the furnace of the old Hoosac Works, and bullion estimated to be worth $10,000 has been taken out.

The three furnaces of the Richmond mine are now reducing 190 tons of ore daily.

NEW MEXICO.

A telegram to the Chicago *Inter-Ocean* dated Santa Fé, N. M., March 31st, says:

"Discoveries of rich silver mines were recently made twenty miles south of this city. They are true fissures, carrying galena and carbonates, assaying 30 to 200 ounces. The silver is near the surface, and the quantity of the ore is inexhaustible. The district is four by six miles in extent, embracing several old Spanish mines. Anthracite coal, iron, and fire-clay are abundant in the district. Excitement runs high."

ONTARIO.

The Belleville *Intelligencer* of the 25th of March says:

"The Feigel gold mine in Marmora is said to be producing about $400 per week, which leaves a considerable profit after paying expenses."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending March 11th, 1879:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
213,030	Balance Puppet-Valve	Louis D. Bartlett	Fitchburg, Mass.
213,062	Weighing-Scales	Frank D. Payn	Albany, N. Y.
213,067	Apparatus for Supplying Fuel to Boiler and other Furnaces	James Proctor	Burnley, England.
213,080	Turbine Water-Wheel	John T. Wilder	Chattanooga, Tenn.
213,087	Manufacture of Artificial Stone	Henry Bacon	Charleston, Me.
213,090	Electric Speaking-Telephone	Alexander G. Bell	Washington, D. C.
213,096	Rotary Steam-Engine	John Darragh	San Francisco, Cal.
213,101	Hydro-Motor	Emil Fleischer	Dessau, Germany.
213,107	Manufacture of Artificial Stone	Thomas P. Hall (a)	Portsmouth, Eng.
213,177	Guides for the Stems of Stamping-Mills	Charles Crane	Park City, Utah.
213,197	Ascertaining the Density and Tensile Strength of Iron and Steel by Magnetism	Anaxamander Herring	Cohoes, N. Y.
213,220	Electro-Magnetic Engine	Charles T. Mason	Sumter C. H., S. C.
213,224	Locomotive and Dummy Engine	Edwin D. McCracken (b)	Chicago, Ill.

(a) Assignor to William Bull, Southsea, England.
(b) Assignor to Edward P. Rice, same place.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

Railway Work; Credit Valley Railway, Toronto, Canada	April	9,	1879
Sewers, construction of; Lucius Slade, City Engineer, City Hall, Boston, Mass.	"	"	"
Books and Blanks for Board of Assessors; Commissioner of City Works, Brooklyn, N. Y.	"	"	"
Coal for Public Buildings; Western District Commissioner of City Works, Brooklyn	"	"	"
Coal for Public Buildings; Eastern District Commissioner of City Works, Brooklyn	"	"	"
Bridge, Wrought-Iron and Lowe Plate Channel-Truss Span of 65 feet; Louis C. Sharkel, County Clerk, Belleville, Ill	"	10,	"
Printing, Paper, etc., Required for the Parliament of the Dominion of Canada; Henry Hartney, Department of Printing, Ottawa	"	"	"
Railway Depots, etc.; R. G. Huston & Co., 82 W. Third street, Cincinnati, Ohio	"	"	"
Lamp-Posts and Frames; B. F. Morse, City Civil Engineer, Cleveland, O.	"	11,	"
Lanterns and Glass, " " " " " " " "	"	"	"
Architect's Designs for School House: L. F. Murphy, Building Committee, Council Bluffs, Iowa	"	15,	"
Army Transportation; M. J. Ludington, Chief Q.M., Fort Omaha, Nev.	"	"	"
Wagon Transportation; Rufus Saxton, Deputy Q.M. General, U.S.A., Fort Leavenworth, Kan	"	"	"
Military Supplies; M. J. Ludington, Chief Q.M., Fort Omaha, Nev	"	17,	"
Heating Apparatus for Department Buildings; Ernest Gagnon, Secretary Public Works, Quebec	"	19,	"
Elevators for U. S. Custom House and Post-Office at Chicago, Ill.; John Fraser, Acting Supervising Architect, Treasury Department, Washington, D. C.	"	21,	"
Illuminating Floor-Tiling for U. S. Custom House and Post-Office, Chicago; John Fraser, Acting Supervising Architect, Treasury Department, Washington, D. C.	"	"	"
Architect's Designs for School-House; William Tindall, Secretary Commissioners, Washington, D. C.	May	1,	1879
Designs for Pumping-Machinery, for which premiums will be paid, as follows: 1st best design, $500; 2d best, $300; 3d best, $200; W. E. Cutshaw, City Engineer, Richmond, Va.	July	1,	"
Stoping from 1000 to 3000 tons of Ore per Month, and Sinking a Working Shaft 400 feet deep; Henry M. Howe, Astor House, New York, from March 31st to April 2d; afterward, at 4 Pemberton Square, Boston, Mass.			
Grain Elevators; Oscar B. Larazin, C.E., Gratz, Austria. Letters can be seen at office of *Engineering News*, New York			
Gas—Supplying the City of Vera Cruz, Mexico, with Gas for a term of five years; Consul General of Mexico, 35 Broadway, New York			
Furnishing the City of New York with Gas, Maintaining Public Lamps, etc., excepting the Twenty-Third Ward and that portion of the Twenty-Fourth Ward known as West Farms, for one year, from May 1st, 1879, to April 30th, 1880; Commissioner of Public Works, New York			
Deepening out the Fairway between Königsberg and Pillau, East Prussia; Vorsteheramt der Kaufmannschaft Königsberg, Prussia			

Southern Pacific.—The terminal station in Arizona this week is at Gila Bend, 120 miles eastward from Yuma and 839 miles from San Francisco. Tracklayers and graders are working steadily forward toward Maricopa Wells and Tucson.

Utah & Northern.—Work on this road has been resumed for the season, and is being pushed forward actively. Last week the rails had been laid for 13 miles northward from the winter terminus at Blackfoot, Idaho, making 219 miles from Ogden, Utah.

Central, of New Jersey.—A branch about 1½ miles long is to be built from this road at Centreville, N. J., to Constable's Hook on New York Bay, where some large factories are already located and several more are to be built.

Richmond & Youngstown.—This company has filed articles of incorporation in Ohio, to build a narrow-gauge railroad from Youngstown, O., southward to Richmond, in Jefferson County, a distance of about 50 miles. The capital stock is to be $250,000,

Savannah & Charleston.—The Court has authorized the Receiver of this road to borrow $75,000 for the purpose of putting the road in thorough repair and making some improvements. The order was opposed by the bondholders, some of whom threaten to appeal.

Shenango & Allegheny.—Negotiations are pending for the extension of this road from its present terminus at Hilliard, Pa., eastward about eight miles to Parker on the Allegheny Valley road. The company is willing to build, if a reasonable amount can be raised in Parker.

The Pittsburg Southern road will be sold at sheriff's sale in Pittsburg, April 11th, to satisfy a judgment for $65,000 for money advanced by James H. Hopkins. The road is of 3 feet gauge, and is completed from Banksville, Pa., to Washington, 22 miles. It has no funded debt, but a floating debt of about $165,000.

THE COAL TRADE REVIEW.

NEW YORK, Friday Evening, April 4, 1879.

Anthracite.

The week under review has been very quiet, and even the very low average prices of the Scranton auction sale have been beaten. The Delaware & Hudson Canal Co. now comes forward to add to the demoralization, by announcing an auction sale of 50,000 tons of coal. Buyers are still looking for lower prices and are purchasing as little as possible, and without a combination scare this sale will probably, if not "bolstered," average between $2 and $2.20 per ton. On the 2d inst., Mr. George A. Hoyt, of the Pennsylvania Coal Co., addressed letters to the representatives of the several interests with the view of bringing about a consultation to devise some plan for securing more remunerative prices for coal. What this may result in, "no fellow can find out;" but there is nothing to indicate that any thing of advantage will come from it. Years of experience with combinations are before the companies; and, although but two plans yet remain to be tried (with no indications that either of these will be accepted), and all efforts have been failures, yet there are some who still hope that some benefits may be gained by a new arrangement.

The letter of Mr. Hoyt referred to above was abortive, if its object were to effect any united action among the companies with the view of increasing prices. Nothing whatever has been done, and nothing whatever, in the form of a combination, will be done. The fact is, the end is already in view. The real, permanent remedy effected by the natural operation of the laws of supply and demand will bring about a cure sooner perhaps than is generally supposed.

The market is in a better natural position than for years, yet the ability to supply is so great that one company may thoroughly demoralize the trade. In ordinary branches of business it is possible to count upon a cessation of competition when prices become so low that it is more profitable to suspend business than to continue it; but there is no counting upon how much of a company's money a manager will squander to bring his competitors to adopting his views.

Were the business conducted with the view of making as much money or of losing as little as possible, prices of coal would be much higher than they are. Although the production of coal is from 1,500,000 to 2,000,000 tons greater now than at the corresponding date last year, yet the markets are quite bare of coal, as a rule, with prospects of an extraordinary demand. Coal is being put in market away below actual cost, and it is only a matter of time when an advance must take place, and if prices go lower now, the advance must take place earlier than otherwise. It is therefore folly for buyers to withhold orders. There is not a company that must not go into bankruptcy if present prices continue for any great length of time. We have, since the combination dissolved in 1877, expressed the view that so many of the laboring class would leave the mining districts, and the accumulated dead-work would be so largely exhausted, that the ability to supply would be brought down to the demand. Were the mines worked to their full capacity during the whole year, they could probably produce more coal than the country would take; but buyers are forcing a very large business into a few months, and in the event of accidents or strikes, prices are likely to advance to a higher point than they have been for several years, for the capacity of the mines is reduced probably 25 per cent from what it was in 1877. Steadily during the past two years has the very best class of miners and laborers been leaving for new districts or other occupations. It is said that large numbers are now leaving for the gold and silver mining districts of the far West. Some miners from the Wyoming Valley are reported to have made a very rich "strike" at Leadville, and it is now said that that district has the Leadville craze, which is affecting so many other portions of the country.

It is not strange that the miners should go to the West, for there they can make two or three times as much as is being made at coal mining. It is a well-known fact that the ability of the collieries to produce coal is being steadily reduced, and there are very few new collieries being opened. Should the demand prove as large as it is now estimated it will be, a larger business would have to be done in nine months than was ever done before, and we do not believe that it can be done. Some of the companies are in favor of limiting the production. If they will practically stand out of the market for a few weeks, and let those companies that are anxious to sell their coal at low prices book a liberal amount of orders for early delivery, it is probable that the same results will be accomplished. In fact, it would be better for those companies losing from 50c. to $1 per ton to act independently, and cease operations for a month or six weeks, and thereby so reduce production as to enable them to get remunerative prices on the balance of their production for the year.

The miners are somewhat restless, and it would not be strange if strikes in some of the regions were to take place, especially in those where the basis system is not in operation.

The Lehigh Valley RR. Co. has reduced its tolls to 74c. from Penn Haven Junction to Perth Amboy and 60c. from Mauch Chunk. This will enable the Mahanoy and Lehigh operators to compete or rather to send coal to this market at prices that must bring a heavy loss to those of any other district.

The production of anthracite coal last week was 457,113 tons as compared with 404,459 tons the previous week, and 180,006 tons for the corresponding week of 1878. The total output from January 1st to March 29th was 4,727,100, as against 2,742,931 tons for the like period of last year, showing an increase this year of 1,984,169 tons.

Our Philadelphia correspondent says:

The trade here is more lively in all quarters, many buyers becoming convinced that the bottom has been touched, and others that, if not touched, it is so very near it that there is no risk of losing on stock laid down at present figures.

The shipping is very much interfered with by the scarcity of vessels. It is difficult to give a rate. A storm from the northwest has been going on for four days, and there are no fresh arrivals.

The bulk of orders on hand is limited to $1.25 to Boston, but those needing coal will have to pay more to get it promptly.

Bituminous.

Steamship contracts aggregating about 70,000 tons are reported. Other contracts amounting to about 40,000 tons have been made. The business, however, has been somewhat checked. Subscription books of the George's Creek & Cumberland Railroad Company have been opened, and the success of this scheme is at last assured. When this road is completed, it will enable those who embrace the advantages offered by it to place their coal at tide-water at as low a cost as any coal of equal quality in the world.

Our Buffalo correspondent writes, under date of April 2d:

"We hand you a list of soft coal and coke prices (printed elsewhere), showing a slight reduction. The anthracite coal trade is quiet and prices lower, seventy-five (75) cents per ton being offered off the present circular. It is expected that upon the opening of canal navigation the lowest rates ever offered in this market will be made for anthracite coal."

The following is from New Orleans, April 1st:

"Coal on hand April 1st, 1879, 111 boats and 2 barges Pittsburg coal. Consumption during March, 25 boats and 3 barges Pittsburg coal, 1 boat St. Bernard coal. Arrivals, 1 boat St. Bernard coal.

"The coal market is firm, with a speculative tendency, on account of the light stock on hand and the lateness of the season of the miners getting to work, rendering it doubtful if sufficient coal can be sent out from Pittsburg to supply this market.

"The only change we can report is in the wholesale price, holders asking 30 to 35c. for their Pittsburg coal.

"The other quotations remain same as last report.

"Respectfully, C. A. MILTENBERGER & Co."

The following is from Montreal, April 3d:

"Our market for all kinds of coal is firm, as supplies are limited, and the demand is somewhat increased by the new protective tariff which has encouraged the sugar refinery to resume work, and has induced other manufacturers to enlarge their operations. The scarcity of anthracite is so great that some has been brought in by rail, and a brisk trade is expected at the opening of navigation. Prices for anthracite have been advanced fifty cents to cover the duty, thus proving that the Canadian consumer bears the whole expense of this feature of the 'national policy.' The price of bituminous coal is not expected to increase to that extent, as the available supplies from Nova Scotia and Cape Breton are in excess of any possible demand, and the duty is not sufficient to enable these coals to compete in Ontario with the Ohio and Pennsylvania bituminous coals.

"We hear of the first sales of Scotch steam coal, to arrive, at $3.75, duty paid, which was the opening price last year, thus ignoring the duty."

The San Francisco *Commercial Herald* of March 27th says:

"Imports from January 1st to March 1st: Anthracite, 965 tons; Coos Bay, 7265 tons; Vancouver Island, 21,619 tons; Seattle, 21,752 tons; Carmel Bay, 100 tons.

"The market is exceedingly dull and depressed, with no disposition shown to make contracts for forward delivery. The arrivals for the week include 225 tons and 199 hhds. from Philadelphia per St. Lucie. Northern coast receipts light. The Seattle *Tribune* reports shipments from that port from January 1st to March 1st, 1879, at 22,251 tons, showing an increase over same time in 1878 of 9983 tons. As before published by us, eight cargoes—four of Scotch Splint, and four of West Hartley—have been bought on contract for summer delivery at or about $8 ℔ ton, and at date there are plenty of sellers at same price, but no buyers at over $7.50, and possibly not that. There is a sharp rivalry among the receivers of Coos Bay Coal, the products of the Eastport and Newport mines selling from $7@$7.50 ℔ ton, while that of the Southport mine has been recently reduced from $7 to $6 ℔ ton. California Mt. Diablo Steam sells at $4@$4.50 for fine screenings, and $4.75@$5.25 for coarse."

PITTSBURG, April 3, 1879.

COAL.—The strike, lately ended, of the Monongahela miners, lasted about ten weeks, and greatly injured the coal trade of the upper Ohio. During the whole period, the rivers were in navigable flood, an important situation which was unimproved; about 60 days have been lost to the miners, in which each one might have earned $120—this time and pay are gone forever; the stand-out for higher wages has brought into the district numerous competing hands to divide a limited amount of work, to do which an ample number of miners were on the ground before the turn-out; it has subjected the proprietors to embarrassments, delays, losses in a business straitened by inexorable competition, making rigid economy essential to its continuance; the miners, though temporarily successful in obtaining the increased pay demanded, have by this movement so disheartened the operators that, after certain contracts are filled, the trade will be but languidly carried on, diminished in amount, and confined mainly to furnishing supplies for gas-making and certain other uses wherein its superiority occasions a preference for Pittsburg coal; it has contributed to a search on the part of the operators for the causes of so much vexation and anxiety, and to the conclusion with some, that it would be better to abandon a pursuit that annoys incessantly, without compensating the sufferers. The business will be sustained in moderate amounts by the existing necessity of using this coal in the manufacture of gas; but for this, those who have been accustomed to using this fuel would be left to the westward and southward coal districts for their supplies. All this difficulty has occasioned no change in prices, the lower markets being held steady by the Kanawha and Ohio coal, which has been plentifully shipped. The Monongahela mines being now nearly all in operation, can furnish 600,000

bushels daily for shipment, and the business will probably be carried on briskly until low water stops the navigation. Our quotations are without alteration :

PRICES AT PITTSBURG.

Wholesale, on board.....	4	cts. per bushel.	$1.06 per ton.
Retail, delivered..... ...	5½	cts. "	1.46 "

AT CINCINNATI.

Wholesale, on board.....	6	cts. per bushel.....	$1.59 per ton.
Retail, delivered	7½	cts. "	1.99 "

AT LOUISVILLE.

Wholesale, on board.....	6	cts. per bushel.....	$1.59 per ton.
Retail, delivered.....	7½	cts. "	1.99 "

AT NEW ORLEANS.

Wholesale, on board.....25		cts. per barrel.....	$2.42 per ton.
Retail, delivered.....40		cts. "	3.87 "

Bushels are rated among dealers here at 76 lbs.—26⅓ bushels make a ton, nearly.

The barrel that rules the coal measurement in New Orleans contains 2¼ bushels of 80 lbs. each, making about 200 lbs. Nine and two thirds of these barrels weigh a ton, within a small fraction.

COKE.—Only 200 of the Connellsville ovens are in operation, owing to the strike of the miners, while 3700 are closed for want of coal. The manufacturers say that their margin is too narrow to admit of their paying the 20 per cent increase demanded. The furnace consumers say they can not stand this rise, and the dealers are equally confident that they can not. And thus this great industry is at a stand-still or nearly so. It is thought that the men will soon give way, as their old wages were not complained of during the last four years—they were sufficient to enable an industrious worker to make $2 a day—and the discontent was incited by the strike of the neighboring coal-miners. There having been no change in prices, we quote as before—$1.15 to $1.30 per ton of 2000 lbs. on board cars at ovens.—*American Manufacturer.*

HOW THE COAL TRADE IS MANAGED.

EDITOR ENGINEERING AND MINING JOURNAL :

SIR : The present situation of the coal trade is alarmingly grave. What is to stay the present headlong rush to financial ruin of both corporate and individual operators?—for that is the inevitable which stares them in the face, unless some plan be speedily devised to avert the impending disaster. The primary causes which have led to the present distressing condition of affairs are, of course, well known : the mad era of "war times," inflation, speculation, swallowing up of private interests by corporate companies, assuming indebtedness of leased railroads, and the wild rush and competition in the output of coal when there was practically an unlimited market for the commodity. After this, the deluge—contraction of business, the almost total suspension of manufacturing, the withdrawal of hundreds of steamships, and the general depression which followed the carnival of distorted enterprise. Hard times were upon us, grim and terrible. Then the great problem which is now being solved. Is there intelligence, earnestness, honesty enough in the management of the great coal companies to bring them safely through, burdened as they are with excessive capital, enormous plant, machinery, and mining capacity, and the shrunken demand for coal under the present order of things? The individual operators are not mentioned in this connection at all, inasmuch as their policy is necessarily shaped by the overshadowing influence of the companies. Since 1875, several plans have been attempted for reaching the best results. Close combination as to price and tonnage, combination on tonnage, and a war of prices, with unlimited production ; all of which have terminated in disaster. It is not the writer's intention, at the present time, to discuss the merits or demerits of any of these schemes, but to point to the fact that no plan has been yet agreed upon for the management of this great industry that has not been thwarted by *bad faith* on the part of some of the members of the compact. It must be supposed that no compact for the management of the trade would be entered into by the heads of the companies unless it had been thoroughly discussed and promised a fair measure of success, and, having entered into it, what excuse can there be for not complying with its terms, when non-compliance means disruption, with its attendant evils—decline of price, destruction of confidence in buyers and demoralization of the market? The combination of 1878, which had the most decent *outward* semblance of being carried out, terminated on December 31st ; but long before that time it had become a dead letter. New York this winter witnessed the anomaly of a decline of prices on a market practically barren of coal. Let us examine the causes which led to this singular condition of things. In the midst of an unusually rigorous winter, with navigation closed, the rail approaches to tide seriously impeded, stocks on hand being rapidly exhausted, the trade clamoring for coal for immediate delivery—and at a price fairly remunerative to the operator—every one perfectly satisfied with the prices current ; in the face of these conditions, the course pursued by two of the coal magnates in January put the price of coal on the downward track, preparing the way for the January Scranton sale—foolish relic of flush times—since which, coal values have gone down by the run, until we see the absurd prices of to-day. Does this look as though the property of the unfortunate stockholders is being handled with distinguished ability and sincerity? For many years, the outlook for spring trade has not been so encouraging as in the early part of this year. The large stocks of cheap coal laid in in 1877 were consumed, the severe winter caused an increased domestic consumption, and from all points came the cheering assurance that coal would be moved early and in large quantity ; while no dissatisfaction was anywhere expressed with the ruling prices. Had the market been left to take its natural course, undoubtedly prices would have been well maintained, and all the operators kept comfortably at work. But the doctors killed their patient.

The prices at which coal is now selling are ominous for the individual operator, whose resources are limited—while the companies can only hope to keep going by *discounting the future.* What the future will bring, unless wiser counsels prevail, it needs no prophet to foretell.

There may be no relevancy in the remark, but it may be observed that coal stocks on the Exchange are affected inversely—coal down, stocks stronger, and *vice versâ,* and one not acquainted with the mysteries of "the street" would naturally suppose that panic prices of coal must have a bear effect on stocks. What is to save the coal properties? Certainly an unlimited output at prices less than the actual cost of mining and transportation—to say nothing of fixed charges—can only hasten the ultimate disaster. The history of the coal trade for the last five years, if it means any thing, means that the management of some of the companies is largely characterized by incompetency or ——.

March 29, 1879. A LOOKER-ON.

THE PHILADELPHIA COAL TRADE.

The *Ledger* of March 31st says :

"There is very little in the tendency of the anthracite coal trade different from what we have had occasion to report from week to week for several weeks past. The demand for coal is still reported pretty good by the Reading Railroad Company, and the supply of vessels at Port Richmond is short of the demand of coal actually ordered for shipment from that point. On Friday last over ten thousand tons were shipped, and the business of the company is represented as steadily more profitable this year under unrestricted tonnage than it was last year, when prices were higher under restricted production. The anxious inquiry now is, will the demand for coal keep prices where they are, or will they continue to sink, and eventually find a downward point where there is no market for coal at prices which will cover the cost of putting it into the market? It is said that that point has already been reached by the individual operators, and that the large companies, which are transporters alone, can supply coal in the market at present prices. The transporting companies make up in toll charges what they lack in profits from coal sales. Unless some arrangement is reached by which the price can be held up to what it now is, the individual operators will have to prepare to go out of the business. They will be found to be simply giving away their coal, hardly exchanging an old dollar for a new one, and this is simply suicidal and foolish. The figures of the Reading Railroad Company continue to show profits, and the Lehigh Navigation Company up to the present makes a similar report of gain over its business in corresponding time last year, and is now $160,000 better off than at the end of its first quarter in 1878. That company now, we hear, begins to experience some reaction. Its orders for coal are lessening, and especially those for coal to its line trade. The well-known superior quality of this company's coal, however, gives it the advantage generally of better prices than can be realized by some other of the competing companies. Any further fall of prices, however, will tell directly to the prejudice of its interest, as a dull market has already done to that of some other parties in the trade. The report in circulation last week, that the Lehigh Valley Railroad Company had reduced its toll charges from Mauch Chunk to tide at Perth Amboy to 60 cents a ton, we are informed is incorrect. The company's toll charges are now 75 cents per ton for the distance named, which is the lowest rate ever made on that road. The new orders for coal with the transporting companies are light ; but, in addition to those which had accumulated previous to last week, have proved enough to keep up a fair shipping business. One great source of complaint as the cause of the present depressed condition of the coal trade is the monthly auction sales of large blocks of coal. These sales tend materially to demoralize the market. They afford opportunities for manipulation of prices. Buyers may conspire to not bid against each other, by agreeing to let one purchaser buy as much as may meet the wants of five or ten, and of dividing it after sale, or sellers may be equally delusive in running up prices through the use of 'Peter Funk bidders. If these auction sales were discontinued, there is reason to believe that some arrangement might be agreed upon among operators that would bring immediate relief to the trade without adding ultimately to the cost of fuel. Freights now favor the buyers, and, with cheap coal, it behooves the dealer to keep himself well supplied. There is not much possibility of a heavy decline in prices. They range now as low as coal has been sold for at any time. We see it intimated that there may be a scarcity of labor during the year in the coal regions, and that the miners may not be found in condition to produce the large amount that may be called for. As to the price, there can be little doubt that the requirements will be so large as to materially advance the quotations above those ruling at present."

IRON MARKET REVIEW.

NEW YORK, Friday Evening, April 4, 1879.

American Pig.—The sales aggregate several thousand tons of Nos. 1 and 2 Foundry iron at our quotations. We learn of no business in Forge, which is very scarce. The market is very firm with still an upward tendency, although there are rumors that more furnaces are to go into blast, which would tend to check the rising tendency of prices. The Western demand for anthracite iron is steadily improving, and is now of considerable importance. We quote No. 1 Foundry, at $18.50@$19 ; No. 2 Foundry, $17 ; and Forge, nominally, $15.75@$16.50.

Scotch Pig is dull but firm. The importations are small. We quote Eglinton at $20 ; Coltness, $22 ; Glengarnock, $20@$21.50.

Rails.—We learn of no business in domestic rails. Steel rails are quoted at $45@$46 here, and $43@$44 at mills. Iron rails are quoted at $36@$37 here. It has come to light that Mr. Wm. H. Vanderbilt recently purchased 12,000 tons of one of the best brands of English steel rails, guaranteed for ten years, at a price equal to $55, laid down here. It has not been learned whether these are to be used on roads in the United States or Canada, but it is generally supposed that they are for use here. If so, there would seem to be room for comment among the American makers, who are offering their products at about $10 per ton less, and among Mr. Vanderbilt's stockholders as to why $120,000 of their money should have been thus spent, unless indeed it is shown that the same make of rails now in use on the Hudson River RR. warrant the payment of the extra cost. As about half the cost is

duty, it will give an unexpected lift of over $300,000 to the United States Treasury.

Old Rails.—A sale of 1000 tons, at $21, is reported.

Wrought Scrap is very scarce. Sales during the past two weeks aggregate about 2000 tons, mostly to arrive from abroad. The foreign market for both scrap iron and old rails is improving.

Messrs. Justice Cox, Jr., & Co., of Philadelphia, under date of April 3d, say :

PIG-IRON.—The demand for pig continues, and prices are firm; consumers that hold back, thinking to get iron at old prices, are now coming into the market; hence the demand keeps up. We quote : No. 1, $18 to $19; No. 2, $16 to $18; Gray Forge, $16 to $17, all Philadelphia.

MANUFACTURED IRON.—The bar trade continues to improve. Consumers find the advance is held to firmly, and are now coming into the market for their wants, despite the Western competition, most mills in this neighborhood having all they can do to supply the demand. In plates a firm market is reported, and most mills running have about all they can do. In skelp some few orders are being placed, but low prices rule. We quote bars, 1 8-10 to 2c. per lb. ; plate and tank iron, 2⅛ to 6c. per lb. ; skelp, 1 9-10 to 2 1-10c. per lb., all Philadelphia.

RAILS.—The steel rail mills continue to run on full orders, with orders offering to keep them busy for all summer and fall. It is rumored in this city that some English steel rails are on the way to this country, bought for prompt delivery. We quote steel at $43 to $45 at mills. The iron rail mills continue to take orders, and a firmer feeling is reported. We quote $32 to $36 at mills.

OLD RAILS.—The demand for spot rails continues, but as there are no rails to deliver, we do not hear of sales. Rails for future delivery are more plentiful. Spot rails are quoted at $22 ; for future, $20.10@$21.50.

SCRAP.—Wrought scrap is in plentiful supply at $19 to $22, while cast is wanted at from $12 to $16.

Our Louisville (Ky.) correspondent writes, under date of April 1st :

"The market remains active. Prices are firm but unchanged. We anticipate a gradual advance on all grades of pig-metal."

Messrs. King, Gilbert & Warner, of Columbus, O., write, under date of April 2d :

"The demand continues to be satisfactory for the season, and prices are well maintained, although the tendency to a sharp advance in prices is less decided than it was some weeks ago. The furnaces do not find it necessary to make any concessions to effect sales, and the trade is in a healthier condition than for some time past. Quotations unchanged."

THE ENGLISH IRON TRADE.

AN IMPROVEMENT SETTING IN.

The more cheerful tone for some time observable in the iron trade is reflected in Messrs. Shaw & Thomson's circular. Though not looking forward to a speedy recovery, they are of opinion that the lowest prices have been reached, and that an upward movement may now be expected. The annual production is at present about six and a half million tons, and at the moment Messrs. Shaw & Thomson estimate the total stocks in Scotland, Middlesborough, Staffordshire, and Wales at no more than 1,200,000 tons, or 2½ months' consumption. In ordinary times, merchants, founders, and dealers would have on hand at least a month's stock, whereas they are now quite bare, working merely from hand to mouth. A very slight increase of demand would thus serve to send up prices and impart activity to the trade. About 130,000 tons of Bessemer steel rails, we are further told, have been contracted for since the beginning of the year. The opening price was £5 10s. ; it fell afterward to £4 6s. ; but has since again risen to £5. It may be mentioned, as illustrating at once the extraordinary fall of prices within the past six years, and the marvelous reduction effected in the cost of producing steel, that Bessemer steel rails, which, as we have just said, are now selling for £5 per ton, in 1873 fetched from £21 to £22 per ton. It is not wonderful that iron rails are discarded, and that the railway companies are rapidly laying their lines with steel. It is said that far-seeing capitalists are already investing largely in steel, in the belief that prices must soon rise.—*Pall Mall Gazette.*

COAL AND IRON NOTES.

The Illinois Supreme Court has decided the "Braidwood coal case" in favor of the miners. The amount involved is about $22,000.

At Danville and Bloomsburg, Pa., furnaces are being fired up, and miners are being put to work in the mines.

The Hutchison Brothers are putting up a lot of new coke ovens at the Duncan mines, near Mt. Pleasant, Pa., and are preparing to make coke the coming summer. By next fall, they expect to have 100 ovens in operation.

THE SPANISH AND AFRICAN IRON ORES IN PENNSYLVANIA.—The Easton *Free Press* says that at numerous places along the East Pennsylvania Railroad a large number of cars loaded with Spanish and African ores can be seen. A report is current that an agent for Spanish ore has contracted with East Pennsylvania parties for about 60,000 tons, at $6, delivered at New York. This ore is said to be a fine magnetic grade without phosphorus.

CUTTING THE PRICES OF COAL IN PHILADELPHIA.—A dispatch from that city, bearing date of March 31st, says : "Reports of cutting in the prices of coal are current. On Wednesday the Schuylkill prices were fixed for line and city trade as follows : Lump, steamer, and broken, $1.85 ; egg, $2 ; stove and small stove, $2.15. On the following day it is charged that these figures were cut to the following : Egg, $1.90 ; broken, $1.75 ; stove and small stove, $2 ; chestnut, $1.75."

CHEERING OUTLOOK FOR THE AMERICAN IRON INDUSTRY.—The Cincinnati *Gazette* prints a set of reports from the iron districts of Ohio and adjoining States on the condition and prospects of the iron trade. The reports were prepared by managers of the leading iron and steel manufacturing works, blast-furnaces, and rolling-mills. All speak of a marked increase of activity in all branches of the trade. Furnace men and manufacturers are more hopeful, and give uniform testimony to an actual improvement in price and better demand for pig-iron and merchant iron.

THE PRESENT CONDITION OF PITTSBURG ROLLING-MILLS is as follows : The American, Jones & Laughlins's mill, is on double turn ; Chess, Smyth & Co. on single turn ; the finishing department of Dilworth, Porter & Co.'s mill is on, the puddle department having been out for some time ; Lewis, Oliver & Phillips's upper mill, A. M. Byers's, Sligo, Clinton, Painter's, Pittsburg Forge and Iron Co.'s, Lewis, Oliver & Phillips's lower mill, Lindsay & McCutcheon's, Spang, Chalfant & Co.'s, Carnegie's mill, Wilson, Walker & Co.'s, Moorhead's, and the Keystone mill are all at present running double turn ; Lloyd's mill and the Pittsburg Forge Co.'s mill are on single turn ; Shoenberger's mill and Brown's mill are also on. All the steel mills are on full, with a good trade.

COAL MINING LEGISLATION IN ILLINOIS.—The West Belleville *National Miner* of March 22d publishes the following bill, which has been introduced in the Illinois State Assembly :

"SEC. 1. Be it enacted by the people of the State of Illinois, represented in the General Assembly : That the miners in any coal mine shall have the right to appoint a competent person who shall, at all times, have access to all scales, weights, or measures, used for weighing or measuring coal at said coal mine. And it shall be his duty to see that all coal is fairly weighed and measured. Said person to be paid by the miners employed therein. Provided, however, that said process shall not make any interference with the working of said mine.

"SEC. 2. All corporations or individuals operating coal mines, or their agents, shall weigh and account to their workmen for all salable coal mined by said workmen."

THE COAL AND SALT INDUSTRIES OF POMEROY, OHIO.—A correspondent writing from Pomeroy, Ohio, under date of March 25th, to the Pittsburg *Telegraph*, says : "Pomeroy is the county-seat of Meigs County, Ohio, one of the oldest Ohio River towns, located about 267 miles below Pittsburg and 199 miles above Cincinnati. It seems to be a continuous town for five miles along the river, including Syracuse, Minersville, Pomeroy, and Middleport, with but one street running through them, and *built close up* against the hills. The great industrial features of the town are the manufacture of salt and the mining of coal. In and near the town, on both sides of the river, are in operation about twenty-four salt furnaces, which will produce this season upward of four million five hundred thousand bushels of salt. There are also six or seven large collieries shipping coal by the river, together with numerous small mines, that furnish fuel to run the salt furnaces, which give pretty steady employment to quite a large number of workmen."

Syracuse, N. Y., Pomeroy, Ohio, and Saginaw, Mich., are the great salt manufacturing districts of America. For some years past, the competition between these three sections in the market, as well as the competition between the different individual operators, became so disastrous that it utterly ruined the business here. To remedy this evil, the operators have formed a company known as the Ohio River and Kanawha Salt Company, through which all salt produced is now sold. This company takes the salt at a given price per barrel, puts it upon the market, and, after paying all expenses, divides one half the net profits with the producers. This plan seems to be working satisfactorily. The yards are pretty well stocked with salt at present, and it is currently reported that a general suspension will take place at an early day at all the works, which will probably last for a month or six weeks, to enable them to work off the surplus stock. They will probably manufacture about four million five hundred thousand bushels of salt here this season, but have capacity for doing much more.

A RESTORATION OF WAGES.—A dispatch to the *Herald* from Wilkes-Barre, dated April 1st, says : "Charles Parrish, who employs nearly five thousand miners and laborers, to-day advanced their pay ten per cent, and ordered all his works to be upon full time. It is understood that Mr. Parrish is determined to take the aggressive in the production of coal. He does not consider the recent decline in auction prices of coal as disastrous. Upon the contrary, in their very face he has increased wages. One of his confidential friends informed a *Herald* reporter that Mr. Parrish proposed to continue a lively competition for some time to come. He was a warm advocate of the combination, and has been laboring for the reorganization of the board of control. The increase of pay has elicited a lively spirit of satisfaction in the whole community." The action of Mr. Parrish does not seem to be understood outside of the coal trade. During the winter he reduced wages 10 per cent, and promised that if other companies did not reduce the wages of their miners he would again restore the old rate of wages. He is only fulfilling his promise.

TOLLS ON THE CANALS FOR THE COMING SEASON.—The New York Canal Board, with the concurrence of the Legislature, has established the following rates of toll on passengers and property transported on the Erie, Champlain, Oswego, and the Cayuga and Seneca canals, to take effect on the opening of navigation. Tolls are computed upon the weight (1000 pounds per mile) of all articles, unless otherwise stated :

	Toward Tide.			From Tide.		
	Cts.	M.	Fr.	Cts.	M.	Fr.
Ashes, pot and pearl	0	0	5	0	0	2½
Pig-iron, bloom and bar iron, castings, and iron ware	0	0	5	0	0	2½
Domestic salt	0	0	5	0	0	5
Foreign salt	0	2	5	0	2	5
Nails, spikes, and horseshoes, iron and steel, railroad iron.	0	0	5	0	0	2½
Flint enamel, crockery, etc	0	0	5	0	0	2½
Stone, lime and clay, and gypsum	0	0	5	0	0	2½
Anthracite and bituminous coal	0	0	1¼	0	0	1¼
Copper ore	0	0	5	0	0	2½
Iron ore	0	0	2½	0	0	2½
Petroleum or earth oil, crude and refined	0	0	2½	0	0	2½

Bar and pig-lead are in the free list.

LEGISLATIVE ACTION ON THE EXHAUSTION OF THE PENNSYLVANIA ANTHRACITE BEDS.—In the Pennsylvania House of Representatives, on the 22d of March, the following concurrent resolution was passed :

"*Whereas*, With one or two unimportant exceptions, all known accessible anthracite coal in the world is found within the limits of the State of Pennsylvania.

"*Whereas*, By the various enactments of former legislatures of this

commonwealth the care and management of these precious deposits of fuel, which are very limited in extent, have been committed to bodies corporate with almost unlimited powers, and with consequent responsibilities.

"*Whereas*, The anthracite coal-fields, the seat of the most important mineral interest in the State, are rapidly becoming exhausted under the present wasteful and unprofitable system of mining and selling the same, which is returning no just recompense to land owner, operator, or miner.

"*Resolved*, The Senate concurring, That the Board of Commissioners of the Geological Survey of the State be requested to cause a survey and examination of the anthracite coal region to be made, paying special attention to the questions of the rapid exhaustion of this most valuable deposit, more economy in the methods of mining, avoidance of greater waste and over-production, now threatening ruin to all interested in this trade, to make a special report with reference to these subjects, and suggesting, if possible, a remedy for the evils above recited."

THE COAL-MEASURES OF MACON COUNTY, ILL.—We take the following from the Chicago *Commercial Advertiser:* "Rich coal-measures underlie two thirds of the county, the veins ranging from four to five feet in thickness, generally lying from 60 to 140 feet below the surface, on dry levels and under secure rock roofing. Coal mining is an important factor in the sum of Macon County industries. The Missouri Coal and Mining Co. is lifting from its several shafts on the Hannibal & St. Joseph Railroad 3600 tons per month. The Western Coal Mining Co. is taking out about the same tonnage monthly from its mines on the same line of road. W. H. Jones & Co. are taking out 1500 tons monthly from their shafts on the St. Louis, Kansas City & Northern road. Small operators near Macon City take out about 600 tons each month, by 'drifting' to supply the local market. It will be seen from the above statement that the monthly coal product of Macon County is 9300 tons, or 775 car-loads. Of this amount about 8000 tons go to the railways for current use and to Kansas and Nebraska, whose coal consumption is increasing at the rate of 25 per cent per annum. The number of men employed in the Macon County mines averages about 600 for the winter and 400 for the summer months—a mean average of 500 for the entire year. The pay rolls and general expense accounts of the several companies and parties engaged in mining will show a monthly disbursement of at least $20,000. The following summarizes the total coal area and operations, etc., of the county:

Basis for coal mining in Macon County, 500 square miles.
Average thickness of vein, 4½ feet.
Average depth of vein below the surface, 110 feet.
Daily product, 357 tons, 29¾ car-loads.
Monthly product, 9300 tons, 775 car-loads.
Yearly product, 111,600 tons, 9300 car-loads.
Monthly export, 8000 tons, 666¾ car-loads.
Yearly export, 96,000 tons, 8000 car-loads.
Monthly disbursement to miners, $20,000.
Yearly disbursement to miners, $240,000.

The difference between the total product and the total export is the amount consumed at home.

THE OUTLOOK FOR THE LAKE SUPERIOR IRON-ORE TRADE.—From the Marquette *Mining Journal* of the 29th ult. we take the following: "If we may believe the reports which come to us from the lower lake cities, there is likely to be a demand for all the ores our mines, including those of the Menominee Range, will be able to raise the present year, and that, too, at an advance over last year's prices. The Cleveland correspondent of the Pittsburg *Commercial Gazette* says that 'considerably more ore has already been placed for delivery during the season than at this time last year. The advance in price, amounting to about 50 cents per ton, has been maintained. Business in ore has so far progressed that there is little doubt that the prices will continue throughout the season. The Republic mine has sold over 70,000 tons; the Champion, Lake Superior, and Jackson, 120,000 tons. The Barnum is reported sold up; the Michigamme also. The Salisbury hematite is all placed. Over 100,000 tons of ores from the new Menominee region have been sold to the makers of Bessemer pig-iron. The Cambria Iron Company, Lucy Furnace Company, Cleveland Rolling-Mill Company, and the furnaces at Chicago are the heavy purchasers of this ore. The prices at which sales have been made are: Republic, $7.50; Champion, $6.75; Lake Superior, $6.50; Menominee, $5.50 and $6, varying with units of metallic iron as shown in analysis. The hematites are reported to have sold at $4.50, without concession. There will be less hematite for sale this season than for several years past. A number of the largest mines have been permanently closed. I look for a continuance of the present healthy tone of the ore market, with a steadily advancing firmness in all ores of undisputed Bessemer properties.'

"We think the *Gazette* is mistaken in reference to the amount of hematite that will be offered. But one hematite mine in this county of any considerable prominence, the Rolling-Mill, has been shut down, and that only temporarily, owing to litigation which involves the title. Not one that we are aware of has been closed down permanently, and the newer mines are likely to more than make up the decrease occasioned by the temporary suspension of the Rolling-Mill. The decrease, if any there shall be in the aggregate production, is more likely to be in the hard ores, which can hardly be expected to equal last year's figures, and the increase in the Menominee mines will probably about represent the total increase of the entire output for the season. It is barely possible that the product of the Marquette mines might be increased, but we apprehend that mine-owners will be content to let well-enough alone, and, even were it possible for them to do so, mine and ship no more ore than may be sold at the prices quoted by the *Gazette's* correspondent."

LABOR TROUBLES. — PITTSBURG, March 27.—The strike of the coal miners of the Monongahela Valley is ended, the operators conceding the demands of the miners and agreeing to pay 3 cents per bushel, an advance of ½ cent. This was brought about by the fact that many of the operators were under contract and heavy bonds to furnish certain amounts of coal to parties at other places. About 7000 men were out, and they will resume work to-day.

PHILADELPHIA, PA., April 2.—A special dispatch from Pittsburg in relation to the recent strike in the coal regions of Western Pennsylvania, says: "Suit has been entered by operators against six miners to recover $7000 damages resulting from strikes. It is alleged that the defendants conspired together to prevent men from working, thus causing the loss named. The defendants were arrested on a *capias*, and committed in default of $2000 bail each. It is thought the case will settle definitely the right of strikers to influence their fellow-workmen."

SCRANTON, PA., April 3.—Eight or ten miners were discharged from the Spring Brook mine of the Erie Company for refusing to take rakes in the mine and clear their coal of culm. This morning the miners, numbering 270, refused to go to work unless the discharged men were reinstated. The mine is now idle. The company will not yield, and the men seem equally determined.

LA SALLE, ILL., April 1.—Yesterday the wages of the miners employed in the La Salle shaft of the Northern Illinois Coal and Iron Mining Company's coal mines in this city were reduced from $1 to 80 cents per ton for long-wall mining in the third vein, and from 80 cents to 60 cents in the second vein; and the miners are on a strike.

CINCINNATI, March 27.—About 400 striking miners gathered at Pomeroy, Ohio, yesterday, and forced the miners of a few mines that were working to join them in a strike for higher wages.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending March 29th and years from January 1st:

TONS OF 2240 LBS.	1879.		1878.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	50,689	635,058	21,616	547,238
D. L. & W. RR. Co.	56,742	733,764	25,614	437,288
Penn. Coal Co.....	28,592	246,367	13,663	115,006
L. V. RR. Co.....	20,678	209,286	1,499	153,046
P. & N. Y. RR. Co..	.....	4,770	.....	5,447
C. RR. of N. J	52,498	388,664	27,520	190,938
	208,599	2,208,909	89,912	1,448,963
Lehigh Region.				
L. V. RR. Co.....	48,338	557,338	33,923	457,447
C. RR. of N. J.....	55,859	444,684	35,008	202,609
S. H. & W. B. RR..	.....	7,914	52	5,834
	104,197	1,009,936	74,983	665,890
Schuylkill Region.				
P. & R. RR. Co	123,470	1,358,890	8,473	521,507
Shamokin & Lykens Val....	19,979	136,381	14,012	98,474
	143,449	1,495,271	22,485	619,981
Sullivan Region.				
Sul. & Erie RR. Co.	868	12,984	626	8,097
Total	457,113	4,727,100	180,606	2,742,931
Increase.....	277,107	1,984,169	.....	.....
Decrease	.....	.....	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Receipts and shipments of coal at Chicago Ill., for the week ending March 29th, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts.....	27,292	416,023
Shipments.....	5,992	102,953

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads, amounts to 56,107 tons, as compared with the corresponding period in 1878.

Perth Amboy Business:	Tons.
Received for the week	27,447
Shipped for the week....	19,479
On hand March 29th.....	147,552

Belvidere Delaware Railroad Report for week ending March 29th:

	Week.	Year. 1879.	Year 1878.
Coal for shipment at Coal Port (Trenton)	.....	.....	170
Coal for shipment at South Amboy	6,460	85,427	125,649
Coal for distribution.....	4,861	79,425	40,204
Coal for Company's use	1,114	24,890	21,406

The receipts of coal at Providence, from January 1st to March 29th, were as follows:

	1879.	1878.
From Philadelphia...	8,597	14,772
From New York.....	79,373	62,270
Soft coal.....	8,577	14,320
Total.....	96,547	91,362

The Production of Coke for the week ending March 14th:

Tons of 2000 lbs.	Week	Year.
West Penn R. R....	2,029	20,400
Southwest Penn. R. R.....18,373		198,892
Penn. & Westmoreland Region, Pa. R. R.	1,279	25,734
Pittsburg, Penn. R. R....	2,751	33,687
Penn. R. R. (Allegheny Region).....	1,240	11,694
Total.....25,672		280,407

The Production of Bituminous Coal for the week ending March 29th was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	26,597	239,826
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	6,809	94,136
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	†....	30,405
*East Broad Top.....	1,453	13,207
Clearfield Region, Pa.		
*Snow Shoe....	786	2,574
*Tyrone and Clearfield..... 31,438		252,876
Allegheny Region, Pa.		
*Pennsylvania R. R	3,353	33,094
Pittsburg Region, Pa.		
*West Penn R. R.....	3,810	42,726
*Southwest Penn. R. R.....	577	7,155
* Penn & Westmoreland gas coal, Pa. R. R..... 17,236		162,348
*Pennsylvania R. R	7,370	85,647

*For the week ending March 14th.
† This report was not received this week.

PRICES OF COAL.

Baltimore. April 2, 1879.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.	By cargoes afloat.	In cars at depot.
Lump and Steamboat.....	$2.60	$2.75
Broken.....	2.60	2.75
Egg	2.60	2.75
Stove....	2.80	2.95
Chestnut	2.60	2.75
LYKENS VALLEY RED ASH.		
Broken....	3.10	3.25
Egg.....	3.10	3.25
Stove.....	3.30	3.45
Chestnut.....	2.85	3.00

From yard or wharf to trade, 50 cents additional.

George's Creek & Cumberland, f. o. b. at Locust Point for cargoes, $2.85@$3.

New York.

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
§Lackawana, at Weehawken	2 35	2 35	2 40	2 40	2 75	2 60
*Pittston, at Newburg	2 35	2 35	2 35	2 35	2 70	2 45
L. Val. Coal Co., at Amboy	.....	.....	.....	.....	.....	.....
Honey Brook Lehigh	.....	.....	.....	.....	.....	.....
Wilkes-Barre at Pt. Johnson	.....	.....	.....	.....	.....	.....
Plymouth R. A. at P. John.	.....	.....	.....	.....	.....	.....
LEHIGH COAL.						
†Spring Mt. at P. Amboy	3 25	.....	2 85	2 85	2 85	2 75
Old Company L., at Eliz'p't	3 30	3 10	2 75	2 75	2 75	2 60
Cross Creek, at Port John.	3 00	2 75	2 75	2 75	2 75	2 65
†Buck M. at Eliz. Pt. or S. A.	3 00	2 75	2 75	2 75	2 85	2 75
Fulton	3 30	.....	2 75	2 75	2 75	2 60
SCHUYLKILL COAL.						
‡*Alongside at N.Y. Harbor.*						
Hard White Ash	.....	.....	2 75	.....	.....	2 65
Free-Burning W. A	.....	.....	2 50	2 50	2 75	2 65
Schuylkill Red Ash	.....	.....	.....	2 60	2 85	.....
Lorberry	.....	.....	.....	.....	.....	.....
Lykens Valley Vein	.....	.....	.....	3 50	3 75	.....

* Fifty cents per ton additional for delivery in New York, and fifteen cents per ton additional for delivery at Weehawken.

† These prices are given by Whitney, McCreary & Kemmerer.

‡ On coal delivered f. o. b., at shipping wharf at Williamsburg, the current rate of harbor freight will be allowed from above prices.

§ F. o. b. at Weehawken, N. J., less 10 cents per ton commission.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lbs.	At the Shipping Ports.	Alongside at New York.
Westmoreland and Penn	$4.25	.....
At Greenwich, Philadelphia	.....	$5.50
At S. Amboy	5.00	5 50
Kanawha at Richmond	4.10	5.40
Youghiogheny, Waverly Co., at Balt	4.00	5.65
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., " "	3 75	5.70
Newburg Orrel, Md. " "	3.75	6.00
Cannelton & Peytona Cannel, West Va.	....	10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.	25s.	13.00
Ince Hall Cannel "	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7 50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.75	$4.50
Caledonia, at Pt. Caledonia.	1.50	4.25
Glace Bay at Glace Bay	1.50	4.00
Lingan, at Lingan Bay	1.50	....
Intern'l Mines, at Sydney	1.75	4.50
Pictou, Vale Mines. at Pictou	2.00	4.70

MANUFACTURING AND STEAM COALS.

Cumberland at G'n & Alexandria.	2.75@2.90	4.35@4.50
Cumberland, at Baltimore	2.90@3.00	4.35@4.50
Cl'rfi'd "Eureka" and "Franklin."		
At mines	0.75	....
At Baltimore & Phila	3.25	4.50

Retail Prices.

Per ton of 2000 lbs,
Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$3.75	$4.00	$3.75
Lack. coal, delivered below 59th St.	3.50	3.75	3 50

Buffalo. April 2, 1879.

[Specially reported by LEE & LOOMIS.]

Connellsville coke, gas, steam, and Cannel coals are offered, for the present, at the following prices per ton of 2000 lbs. :

	Lump.	Run of Mine.	Nut.	Slack.
Connellsville coke	$4.85	.....	.....	.....
Brookfield Coal	3.40	.. ....	.....	.....
Briar Hill	3.15	.....	.....	.....
" " No. 2	.....	.....	.....	.....
Youghiogheny	... .	.....	.....	.....
Monterey	.....	2.50	2.15	1.75
Catfish	.....	2.50	2.15	1.75
Stoneboro	.....	2.50	2.15	1.75
Sterling Cannel	4.50	... .	.....	.....
Cameron	.....	... .	... .	.....
Buffalo Coal Co	.....	.....	.....	.....

Terms, equal to cash in New York city funds.

BLOSSBURG COAL.
Per ton of 2000 lbs.

	To dealers.	To consumers.
By car or boat	$3.25	$3.25
In yard	3.40	3.60
In car	....	3.65
Delivered	.....	4.00

	To dealers.		Retail.
	On cars or boats.	In yard, screened.	Delivered.
Grate	$4.15	$4.25	$5.15
Egg	4.25	4.35	5.25
Stove	4.50	4.60	5.50
Chestnut	4.00	4.10	5.00
Lehigh Lump	....	....	....
Blossburg	3.25	3.40	4.00

[Specially reported by E. L. HEDSTROM.]

Prices at International and Suspension bridges for dealers in Canada and the West, per ton of 2000 lbs. :

Grate.	Egg.	Stove.	Chestnut.
$4.15	$4.25	$4.50	$4.00

Prices at Buffalo for city dealers :

Grate.	Egg.	Stove.	Chestnut.
$4.15	$4.25	$4.50	$4.00

Buffalo retail prices, delivered :

Grate.	Egg.	Stove.	Chestnut.
$5.15	$5.25	$5.50	$5.00

[Specially reported by C. M. UNDERHILL.]

	DELIVERED AT				
	Elmira.	Ithaca.	Syracuse	Rochester.	Oswego
	Afloat.	Afloat.	Afloat.	Afloat.	F. O. B
Lump	.....	.....	.....	.....	.....
Grate	$3.75	$3.60	$3.60	$3.85	$4.05
Egg	3.85	3.70	3.70	3.95	4.15
Stove	3.95	3.95	3.95	4.20	4.40
Nut	3.85	3.85	3.60	3.85	3.90

	DELIVERED AT					
	Sodus Point.	Charlotte.	Erie.	Buffalo.		
	F.O.B.	F.O.B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump	.....	.....	.....	.....	.....	.....
Grate	$4.05	$4.05	$4.55	$4.15	$4.55	$5.15
Egg	4.15	4.15	4.65	4.25	4.65	5.25
Stove	4.40	4.40	4.90	4.50	4.90	5.50
Nut	3.90	3.90	4.40	4.00	4.40	5.00

Louisville. April 2, 1879.

[Specially reported by Messrs. BYRNE & SPEED.]

Wholesale per bushel of 72 lbs.

Pittsburg	6c.	Kentucky, in river	5½c.
Raymond City	6	Kentucky, on cars	6

Retail.

Pittsburg	$3.00	City made Coke	8c.
Raymond City	2.75	Gas Coke	8
Kentucky	2.50	Cannel Coal	17
Anthracite, per ton	7.50	Hard and soft Coke	8

Montreal. April 3, 1879.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Bituminous at wholesale per 2240 lbs.

Scotch Steam	$5.50	Cape Breton Steam	$4.75
Pictou	5.25	Newcastle Smith's	6.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$7.50	Chestnut	$7.00
Egg	7.50		

New Orleans. April 1, 1879.

[Specially reported by Messrs. C. A. MILTENBERGER & Co.

PITTSBURG COAL.

At wholesale (by boat-load)	30@c.35 per bbl. of 180 lbs.
To steamboats	40@45c. " "
" manufactories	@40c. " "
" families	45@50c. " "
In hhds. (for shipment)	$5.00 per hhd from 5 to 6 bbls.

ANTHRACITE COAL
Per ton of 2000 lbs.

At wholesale	$6.00 to $7.00
To families etc	8 50 to 9.00

ST. BERNARD (KY.) COAL.

To steamboats	40c. per bbl. of 180 lbs.
" families	45c. " "
Virginia cannel at retail	85c. " "

Richmond. April 2, 1879.

[Specially reported by S. H. HAWES, Dealer in Coal.]
Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.00
Coalburg Splint	4.00	Clover Hill Coal	2.50
Lewiston "	4.00	Norwood Gas and Steam Coal	2.70
Kanawha Gas Coal	4.00		

Sandusky. April 2, 1879.

[Specially reported by Messrs. BLACK & CLARKE, Agent Con, Coal and Mining Company.]
Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6.00	$6 00	$6.25	$5.75
Wilkes-Barre	4.80	4.90	5.15	4.65
Pittston	4.80	4.90	5.15	4.65

BITUMINOUS.

Massillon	$2.85	Straitsville	$2.00
Hocking Valley	2.50	Piedmont	1.54

Prices retailed delivered 50c.@75c. above car prices.

St. Louis. April 1, 1879.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]
Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@	Lehigh	$8.50@
Wilkes-Barre	7.50@	Connells. Coke.	6.00@
Schuylkill	7.50@	Blossburg	7.75@

April 1, 1879.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block.	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

FREIGHTS.

Railroad Coal Freights.

On and after March 19th, until further notice, the rates of transportation on through coal, consigned as noted below, and passing over the Lehigh Valley Railroad Company's road from mines through, will be as follows :

To	From Penn Haven.	From Mauch Chunk.
Kennedy	.....	1.50
Musconetcong and Bloomsbu'y.	.....	1.60
*West End	.....	1.65
*Pattenburg	.....	1.75
Midvale, Landsdown, and Sunny-Side	.....	1.75
Stanton, Flax Mill, and Flemington Junction	.....	1.75
Three Bridges, *Neshanic, Flagtown, and South Somerville.	.....	1.75
*Bound Brook	.....	1.75
*New Market	.....	1.75
New Brooklyn and Fords	.....	1.75
Woodbridge and Spa Spring	.....	1 75
Voorhees, Clyde, Middlebush, and East Millstone	.....	1.75
Jersey City, New Brunswick, and all intermediate points on the Main Line of the New Jersey Division of the Pennsylvania Railroad	.....	1.11
Perth Amboy—Local	.....	1.15
TIDE COAL.		
Mauch Chunk	14	....
Phillipsburg	70	56
Perth Amboy	89	75
VIA MORRIS CANAL.		
Newark	.....	1.01
Jersey City	.....	95
New York	.....	95
VIA NORTH PENN RR.		
Philadelphia	.....	1.50
VIA PERKIOMEN RR.		
Philadelphia	.....	1.50

* Ten cents per ton to be added to rate for all coal dumped into coal pockets.

A deduction of 25 cents per ton will be made on the New Jersey Division of this road (except Perth Amboy) on coal consigned to coal-yard dealers, and to manufacturers using coal for generating steam.

This company will ship coal over their wharves at Perth Amboy, and will retain, as compensation therefor, all of the pea and dust resulting from such shipments.

On coal shipped from stock there will be a charge of 5 cents per ton, in addition to the pea and dust.

Coal standing in cars more than one working day, will, in the absence of vessels to receive it, be dumped upon the wharf.

MORRIS CANAL.

On coal received by canal at Jersey City a charge additional to the freight of 20 cents per ton will be made for transferring it from boat to boat, and 30 cents per ton for placing the same on the wharves and re-shipping.

Rates of Freight on Anthracite Coal to Tide-Water Ports.

SCHUYLKILL COALS. Per ton of 2,240 lb.	From * Pine Grove.	From *Tamaqua.	From *Schuylkill Haven.	From Port Clinton.
To *Port Richmond*, via P. & R. R. R., Main Line, for shipment	1.75	1.65	1.50	.....
To *Harrisburg*, via Lebanon Valley Branch	1.10	1.60	1.45	.....
To *Allentown*, via East Pennsylvania Branch	1.37	1.32	1.17	....
To *Lancaster*, and Points on Lancaster Branch, via R. & C. R. R.	1.49	1.44	1.27	.....
To *Dauphin*, via Schuylkill and Susquehanna Branch	93	1.32	1.17	.. ...
To *Slatedale Junction*, via Berks and Lehigh ranch	1.52	1.47	1.32	.....
To *Lebanon*, via Lebanon and Tremont Branch	84	.....	.....	.....
To *Philadelphia*, via Schuylkill Canal, including loading and trimming and the tolls	.....	.....	1.25	1.15
To *New York*, via Schuylkill Canal, including loading and trimming, tolls on the Schuylkill Canal and Delaware & Raritan Canal and the towing between Fairmount and Bordentown and between New Brunswick and New York and down Delaware River	.....	.....	2.00	1.90

From *Tamanend*† to *Catawissa, McAuley, Mainville, Rupert* and *Danville*, via Catawissa & Williamsport Branch Railroad 90

From *Tamanend*† to *Williamsport, Hall's* and *Montoursville*, via Catawissa & Williamsport Branch Railroad 125

*For shipment via Main Road (except to Port Richmond for shipment) or Schuylkill Canal, one and one-half cents per ton per mile, and two cents per ton additional to Schuylkill Haven, Pine Grove, Tamaqua or Port Clinton, for Canal, as the case may be. Provided no charge shall be less that 15 cents, or greater than 45 cents per ton

† Coal sent to points on the Catawissa and Williamsport branch will be charged one and one half cents per ton per mile, and two cents per ton additional to Tamanend.

No separate charge for freight and tolls for coal consigned to Port Richmond for shipment, will be made for Laterals, but there will be collected on all such coal upon the Laterals on account of the entire through charge to Port Richmond : 25 cents at Schuylkill Haven, 10 cents at Tamaqua, and 5 cents at Pine Grove.

For consumption at local points in coal region, including

Shamokin, Herndon, Schuylkill Haven, Pine Grove, and Tamaqua, three cents per ton per mile, and two cents per ton additional; and a charge for *car service* of fifteen cents per ton when in Philadelphia and Reading Railroad cars, provided no charge, including freight tolls and car service, shall be less than twenty-five cents per ton. If the coal is for manufacturers, the rate wi be two cents per ton per mile, and two cents per ton additional; and a charge for car service of five cents per ton when in Philadelphia and Reading Railroad cars. Provided no charge, including freight, tolls, and car service, shall be less than fifteen cents per ton.

Sent westward via Northern Central Railway (in N. C. R W. Co.'s cars), three cents per ton per mile, from collieries west of Locust Summit to Locust Gap, or Shamokin, provided no charge will be made less than four cents or more than fifteen cents per ton.

One mile extra will be added for coal passing through the East Mahanoy Tunnel.

Fractions of distances and rates will always be stated in *tenths*.

No charge will be made for weighing or making returns of coal shipped, and the latter will be furnished free of charge upon application to the weighmaster; if these returns are to be sent by mail, envelopes properly stamped and addressed, must be furnished to the weighmasters.

All coal will be charged the rates (both lateral and main line) current on the day it is weighed; it will also be waybilled on the same day.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to March 28th, 1879.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Baltimore	50@60		
Bath, Me		1.65	
Boston, Mass	1.75@1.25§	1 65	1.00@1.15
Bridgeport, Conn.	95	1.40	
Bristol, R. I.	1.23		
Brooklyn			
Cambridge, Mass.			
Cambridgeport	1.5 §		
Charleston	1.50		
Charlestown	1.75		
Chelsea	1.45		
Danversport			
Derby	1.15		
East Cambridge			
Easton, Md	1.00		
Fall River			80
For ress Monroe			
Fredericksburg			
Galveston			
Georgetown	75		
Gloucester	1.50		
Hackensack			
Hampton, Va	65		
Hartford		1.40	
Hoboken			
Jersey City			
Lynn			
Marblehead			
Middletown			
Milton	1.70‡		
Nantucket	1.50		
Newbern, N. C.	80		
New Bedford	1.50		90
New Brunswick			
New Castle, Del.	30		
Newburyport		1.80	
New Haven	95@85†	1.40	
New London		1.40	
Newport	1.25		
New York	85@85†	1.40	
Newark			
Norfolk, Va	50		75
Norwich		1.40	
Norwalk, Conn		1.40	
Pawtucket	1.25‡		
Peekskill	85		
Petersburg			1.10
Philadelphia			
Pine Island	1.45		
Portland	1.30@1.50	1.65	1.00@1.15
Portsmouth, Va.			
Portsmouth, N.H.	1.35@1.90	1.80	
Providence	1.28@1.40	1.40	80
Richmond, Va			85
Rockland			1.65
Saco	1.75		
Sag Harbor	1.25		
Salem, Mass.			
Savannah	1.25		
Somerset			
St. John, N. B.			1.00
Wareham			
Washington	70@90		
W'lmington, Del.	1.50		

* And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra. ‖ Alongside.

PRICES OF IRON.

Baltimore. March 31, 1879.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

Below we quote present prices for pig-iron and blooms, with fair demand:

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	27.00@ 30.00	C'lC.B.Blooms	50.00@ 52.00
Anth. No. 1	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refl'd Blooms	45.00@ 50.00
" " 3	17.00@ 18.00		

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending April 3d, 1879, are given below.

DATE.	From	To	Cargo.	R'te
Mch. 7	South Amboy	New Orleans	RR. iron	3.25
" 7	New York	Charleston	§	
" 7	Perth Amboy	Boston	Pig-iron	1.90
" 11	New York	Wil'ngt'n, Del.	Pig-iron	1.00
" 18	New York	Wash'gt'n, D.C.	*	1.60
" 18	Elizabethport	Baltimore	Pig-iron	90
" 18	Hoboken	Portland	Pig-iron	1.70
" 20	Philadelphia	Cardenas	Coal	1.10
" 20	Philadelphia	Matanzas	Coal	1.10
" 20	South Amboy	Havana	Coal	1.00
" 20	Perth Amboy	Portland	Pig-iron	1.60
" 21	New York	Bridgeport	Guano	1.50
" 21	Baltimore	St. Thomas	Coal	2.75
" 21	Port Johnson	Aspinwall	Coal	3.50
" 21	Black Rock	City Point	*	2 00
" 21	Boothbay	Savannah	‖	1.75
" 25	Philadelphia	Galveston	RR. iron	4.75
" 25	New York	Boothbay	Salt	¶
" 28	Philadelphia	Portland, Or'g'n	RR. iron	8.50
" 28	Perth Amboy	Port Royal	RR. iron	1.85
" 28	Perth Amboy	Boston	Pig-iron	1.40
" 28	Philadelphia	St. Thomas	Coal	2.75
" 28	Baltimore	Martinique	Coal	2.90
" 28	Baltimore	St. Thomas	Coal	2.75
" 28	Wood's Hole	Petersburg	Guano	1.75
Apr. 1	South Amboy	Havana	Coal	1.00
" 1	Baltimore	St. Jago	Coal	1.50
" 1	Ashley River	Orient	†	2.75
" 1	Charleston	Baltimore	†	1.75

* Phosphates. † Phosphate rock. ‡ Phosphates and railroad iron. § Fertilizers and sulphur. ‖ Super-phosphates. ¶ $1 per ton.

Cleveland. April 2, 1879.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

No. 1 Red Specular	$6.00	per ton	cash.
No. 2 " "	5.00	"	"
Red Hematite	4.25	"	"
Lake Champlain ore	5.25	"	"

FOUNDRY IRON.

No. 1 L. S. Charcoal	$22 00	Am. S., No. 1, Ch. Val	$20.00
No. 2 " "	21 00	" " B—1, " "	18.00
No. 1 Anthracite	20 00	" " No. 2 " "	18.00
No. 2 "	19 00	No. 1, Massillon	19.00
No. 1 Bituminous	20 00	B—1, "	17.00
No. 2 "	18 00	No. 2, "	16.00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$23 00	Nos. 5 & 6, L. S. Char.	$23 00
No 4, " "	23 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char	$23.00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$16 00

Columbus, O. April 2, 1879.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal	$22.00@$22.50
No. 2 " " "	21.00@ 21.50
No. 1 Hocking Valley soft and strong from pure limestone ores	18.25@ 18.75
No. 2 Hocking Valley soft and strong from pure limestone ores	17.25@ 17.75
No. 1 American Scotch	18.00@ 18.50
No. 1 Moxahala	18.00@ 18.50
No. 2 "	17.00@ 17.50
No. 1 Shawnee	18.00@ 18.50
No. 1 Silver Gray	16.50@ 17.00
No. 2 " "	15.50@ 16.50

MILL IRONS.

Gray neutral	16.00@ 16.50
Mottled and white neutral	15.00@ 15.50
Gray cold short	15.50@ 16.00
Mottled and white cold short	14.50@ 15.00

Louisville. April 1, 1879.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The usual time, four months, is allowed on the quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22.00	$19.00@$20.00
Southern Charcoal	19.00@ 20.00	17.00@ 17.50
H'n'g Rock, Stc'l & Coke	19.50@ 20.00	18.50@ 19.00
Southern Stonecoal & Coke	19.00@ 19.50	18.00@ 18.50

"Amer. Scotch"... $18@$19 | Silver Gray... $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16.50@$19.00
No. 1 Stc'l & Coke, Cold-short & Neutral	17.00@ 17.50
No. 2 Stc'l & Coke, Cold-short & Neutral	16.50@ 17.00
No. 1 Missouri and Indiana, Red-short	20.00@ 21.00
White & Mottled, Cold-short & Neutral	15.00@ 15.50

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$30.00@$32.00
Alabama and Georgia, Cold Blast	28.00@ 30.00
Kentucky, Cold Blast	27.00@ 30.00

Milwaukee. April 1, 1879.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23.00—4 mos.
" 2 " " " "	22.00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23.00—4 mos.
" 2 " " "	22.00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24.00@	—4 mos.
Hubbard "	23.00@	—4 mos.
Milton Silver Gray	$19.00@ 21.00@	—4 mos.

Four months, or $1 per ton off for cash.

CAR WHEEL.

Lake Superior ores per ton	$24.00@25.00—4 mos

Pittsburg. April 2, 1879.

[Specially reported by A. H. CHILDS.]

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. April 2, 1879.

[Specially reported by ASA SNYDER, Esq.]

Amer. Scotch Pig Iron	$21.50@$22.50
Anthracite " " No. 1	19.00@ 20.00
" " " No. 2	18.50@ 19.00
" " " No. 3	17.00@ 18.00
" " Mottled	15.00@ 16.00
Coke " No. 1	19.00@ 20.00
" " No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short	19.00@ 22.00
" " " " neutral	27.00@ 28.00
" Warm " " " cold short	18.00@ 20.00
" " " " mill	17 00@ 18 00
Old Rails	17.00@ 18.00
Wrought scrap No. 1	16.00@ 17.00
Cast scrap—Machinery	15.00@ 16.00
Richmond Refined Bar Iron	2.00@ 2.10
Horse-shoes	4.00@ .....
Mule-shoes	5.00@ ...
Old Dominion nails (standard size)	2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

METALS.

NEW YORK, Friday Evening, April 4, 1879.

The past week has shown a very good jobbing and consumptive demand in some metals, but there has been no large business transacted.

RECEIPTS OF METALS AT NEW YORK FOR THE THIRTEEN WEEKS ENDING APRIL 3D AND YEAR FROM JANUARY 1ST, 1879.

	Mar. 13	Mar. 20	Mar. 27	Apr. 3	Year from Jan. 1.
Copper, bbls	18	32	225	64	1,630
Copper, boxes					
Copper, cakes	321		654	622	4,104
Lead, pigs	4,671	11,669	2,980	9,936	56,070
Spelter, pieces	7,525	4,523	712		33,350
Quicksilver, flasks					

Copper.—We learn of no business worthy of note It looks as though the market was being prepared for both an export sale and a contract with manufacturers. It is certainly in as artificial a position now as it has ever been. We quote 15¾@16c.

From London, under date of March 21st, we have received the following:

"There is a rather irregular market for Chili bars, and neither buyers nor sellers seem decided as to what they ought to do; some few parcels of metal, amounting, perhaps, in all to about 200 tons, have changed hands at £56@ £56¼ for common marks, and £57 for best brands, usual cash terms; while £57¼ has been paid for the latter sort, to arrive in about two months, and £57 for the former description, with three months fixed prompt. Values closed rather nominal, at £55¾@£56¼ for common brands, £56¼@£56¾ for favorite, £57@£57½ for best sorts, with scarcely any thing offering for sale, even at the extreme rates, while buyers spoke as if they would not care to pay beyond the minimum figures. Wallaroo Cake is obtainable at £65; Burra at £64.

Tin.—The London quotation of Straits is £68. Singapore quotes $21.25, and Penang, $21.37½, with exchange at 3s. 8⅜d. The quotations here are: Straits, 15c.; L. and F., 14⅞@15c.; Refined, 15¼c. There has been a good jobbing business with a larger inquiry from consumers; 7000 slabs of Billiton shipped here on speculation are due in May. Our advices from London, under date of March 21st say:

"Tin is also in an unsettled state; a few tons were sold at 66½s.@67s., but at these prices no important business could be carried out, either in buying or selling."

Tin Plates.—There has been no change since our last.

Messrs. Robert Crooks & Co., of Liverpool, under date of March 20th, say of tin and terne plates:

"Demand continues light, and prices are therefore dull, though there are few pressing sellers. Charcoal tins are the firmest, next charcoal ternes, while cokes, tin and terne, are decidedly easier to buy—at lower figures. We are not able to change quotations, but number of brands procurable on lower bases is considerably increased."

Lead.—There has been but a very small business at 3¼c., at which price the market closes weak. There are 200 tons of Richmond lead on dock awaiting sale, which has a demoralizing effect. The London price is said to be £15.

Spelter and Zinc.—Both are quiet; the former quoted at 4⅝@4¾c., and the latter at 6¼@6½c.

Antimony is dull. Hallett's is quoted at 11½c., and Cookson's at 12¼c.

Quicksilver.—Last week we referred to a proposed combination to restrict production, hoping thereby to advance the price to 40c. The matter has not yet been fully consummated. What can it accomplish without the cooperation of the Rothschilds, who control the mines of Spain and the London market? We understand that these parties now offer to sell quicksilver, delivered in New York, at £6 per bottle. This is but a small advance over our nominal price of 38c. The Oceanic, for Hong Kong, hence on the 22d inst., carried 801 flasks.

The quicksilver exports by sea from March 22d are as follows:

	Flasks.	Value.
To China, per Oceanic, March 22d:		
Thomas Bell	300	$9,180
Wau Yune Lung Kee	400	14,000
Wing Chong Wo & Co	100	3,000
To Java, per Oceanic, March 22d:		
Cutting Packing Co	1	31
Totals	801	$26,611
Previously since January 1st	9,603	298,181
Totals since January 1st, 1879	10,404	$324,792
Totals same period 1878	5,458	184,660
Increase in 1879	4,946	$140,132

Receipts for the week, 887 flasks.—*San Francisco Commercial Herald, March 27th.*

THE BULLION MARKET.

NEW YORK, Friday Evening, April 4, 1879.

The market has sustained within a few days the decline which has followed every recent advance in the price of silver, but it has a firmer appearance, and were there not such a stagnation in business with the East Indies, it might be expected to advance. It is not unlikely that the present very general agitation and discussion of the silver question, and of the propriety of international interference to prevent a further decline, will steady the market, if it should not advance it in a small degree.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Mar. 29	50 3-16	109¼	April 2	49½	108
Mar. 31	50 3-16	109⅛	April 3	49½	108
April 1	49⅞	108¾	April 4	49⅝	108¼

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of March 29th:

March 18th	Ophir	Nev.	$20,923.15
" 21st	Alexander	"	12,743.00
" 22d	Northern Belle	"	18,920.63
" 22d	Paradise Valley	"	5,548.27
" 22d	California	"	82,828.98
" 22d	Con Virginia	"	76,688.75
" 22d	Martin White	"	13,017.73
" 23d	Big Prize	"	2,000.00
" 24th	Grand Prize	"	4,700.00
" 25th	Eureka	"	15,039.35
" 17th	Bodie	Cal.	11,547.79
" 20th	Standard	"	19,568.68
" 20th	Bulwer	"	17,495.40
" 22d	Leeds Mill	Utah	3,993.48
" 24th	Silver Reef	"	14,905.55
" 25th	Christy	"	5,995.00
" 27th	Pioneer	"	2,782.79
" 27th	Barber & Walker	"	2,143.00
	Nederland Mill	Colo.	5,420.00
	Atchison Mill	"	1,400.00
	Gold Hill	Idaho	10,860.00

The mines of Silver Reef, Utah, are now yielding $100,000 a month.

The Horn-Silver Mine, Utah, shipped through Campbell, Cullen & Co. on March 24th and 27th, 56,535 lbs. of base bullion.

Messrs McCormick & Co., of Salt Lake City, received from March 21st to March 27th $34,743 in bullion.

Great Britain's Imports and Exports of Bullion.—We are indebted to Sanders Brothers' Monthly Circular for the following statistics;

	—Month ended February 28th.— 1877.	1878.	1879.
Total imports of bullion into the United Kingdom	£1,469,195	£2,572,773	£2,077,153
Total exports of bullion from the United Kingdom	2,231,493	3,675,392	1,419,899
	—Two months ended Feb. 28th.— 1877.	1878.	1879.
Total imports of bullion into the United Kingdom	£3,829,447	£4,681,080	£5,213,792
Total exports of bullion from the United Kingdom	7,161,221	6,744,911	3,277,649

Coin Balance of the U. S. Treasury April 1st, 1879.

Gold coin and bullion	$133,416,125
Standard silver dollars	21,558,894
Silver coin and bullion	15,116,445
Gold certificates	50,740
Silver certificates	2,074,830
Nickels and silver coins	1,481,022

Gold Interest Paid Out by the Treasury.

Week ending March 29th	$215,552
Corresponding week last year	205,316
Since January 1st, this year	18,753,108
Corresponding period last year	22,110,614

Exports of Gold and Silver from New York.

Week ending March 29th	$370,366
Corresponding week last year	1,838,718
Since January 1st, this year	4,856,399
Corresponding period last year	4,443,243

It is expected that the Sultan's plate, which has has been sent to the mint, will bring $500,000.

Coinage of the United States Mints for March.—WASHINGTON, April 1.—The following is an official statement of the coinage executed at the United States Mints during March, 1879: Double Eagles—170,975 pieces; value, $3,419,500. Half-eagles—12,480 pieces; value, $62,400. Total gold—183,455 pieces; value, $3,481,900. Silver dollars—2,087,200 pieces; value, $2,087,200. Half-dollars—200 pieces; value, $100. Quarter-dollars—200 pieces; value, $50. Dimes—200 pieces; value, $20. Total silver—2,087,800 pieces; value, $2,087,370. Five cents—400 pieces; value, $20. Three cents—400 pieces; value, $12. Cents—778,400 pieces; value, $7784. Total minor pieces, 779,200; value, $7816. Total coinage—3,050,455 pieces; value, $5,577,086. Total coinage of standard silver dollars to April 1st, 1879, $28,774,950; of this number nearly $7,000,000 are in circulation, leaving over $20,000,000 on hand.

The Silver Agitation in Europe.—LONDON, April 2.—The continued and increasing depression in the India and China trade attracts more and more attention, and the opinion that no permanent relief can be obtained until silver is remonetized gains ground in many quarters. The interview which is to take place on Friday between Earl Beaconsfield and a deputation from the Liverpool Chamber of Commerce is looked forward to with grea interest. The statement that Germany is about to coin a large amount of silver money is regarded as having peculiar significance at this moment. The inability of the chartered Mercantile Bank of India, London, and China, No. 65 Old Broad street, to pay a dividend to its stockholders by reason of the large losses which it has sustained during the last six months had been anticipated to a great extent, and the announcement of the fact to-day did not cause much commotion. The bank is thought to be able to go on for some time, and probably to meet all its indebtedness. But the impression continues to deepen that so long as the demonetization of silver continues in England, the India and China trade will involve every one in loss who is embarked in it. The *Times*, in a recent financial article says: "The government's proposal for a loan of £10,000,000 in this market for the service in India took its rise in a memorial by bankers and others who advocated raising money for the express purpose of buying silver and so raising the level of Indian Exchange. Practically, therefore, the loan would go toward helping Germany to sell some of her useless silver at a good price. Beyond that, it will do nothing to redress the real grievances of Indian finance, which, without instant and steady resort to most rigorous economy, will rapidly sink into hopeless confusion." It is even said, though this statement is quite improbable, that Germany, after having devoted years of time and sacrificed much wealth to the work of getting rid of silver save as a subsidiary coinage, is now about to retrace its steps and to gradually come back to a double standard. Prince Bismarck is at present paying especial court to the agricultural classes, and they are very much in favor of silver as money.

France on the Single Standard.—In the French Chamber of Deputies, on the 27th ult., M. Emile Guyot, replying to certain arguments against the Latin Union Monetary Convention, pointed out that by remaining in the Latin Union the French stock of silver was diffused over 72,000,000 of people instead of being confined to 40,000,000. Between 1850 and 1870, he said, France had exported $300,000,000 in silver, and she might hope for such further reduction of her stock as would put her in a position to discuss a single standard.

FINANCIAL.

Coal Stocks.

NEW YORK, Friday Evening, April 4, 1879.

A steady bull movement has been the feature of the week, prices in some instances having gone up 3 per cent. Delaware, Lackawanna & Western has been active, at prices ranging from 46½ to 50⅝, closing strong at the lattet figure, with sales of 149,810 shares. New Jersey Central shows a large week's business, as also does Delaware & Hudson Canal. Philadelphia stocks are firm, with a tendency to higher prices; the transactions have been about the average.

The following-named companies have their semi-annual dividend periods during the month:

Pennsylvania Salt Mfg. Co.
Cambria Iron Co.
Nescopec Coal Co.
United Cos. of New Jersey.
Diamond Coal Co.

AUCTION SALES:

Schuylkill Navigation Co.—$5000 6 per cent bonds of 1907, at 60 per cent.

Lehigh Valley RR. Co.—$2000 6 per cent bonds, at 101¾ per cent.

Sunbury, Hazleton & Wilkes-Barre RR. Co.—$1700 5 per cent first-mortgage bonds, at 80½ per cent.

Bethlehem Iron Co.—$4000 first mortgage 6s, at 91 per cent.

Lehigh Navigation Co.—$2500 6 per cent bonds, at 70 per cent.

Philadelphia & Reading RR. Co.—$9000 consolidated mortgage 7 per cent bonds, at 103⅞ per cent.

Pennsylvania Salt Manufacturing Co.—165 shares, at $73@$72½ per share.

COUPONS and interest on the bonds of the following companies fall due during the present month:

NEW YORK.

Albany & Susquehanna RR. Co.—Con. mortgage bonds, coupons and registered. Interest paid by Delaware & Hudson Canal Co.

Albany & Susquehanna RR. Co.—Second mortgage bonds. Coupons paid by Delaware & Hudson Canal Co.

Columbus & Hocking Valley RR. Co.—Coupons.

Delaware, Lackawanna & Western RR. Co.—Morris & Essex RR., Newark & Bloomfield RR., and 1st mortgage bonds of Syracuse, Binghamton & New York RR.; interest or coupons.

Delaware & Hudson Canal Co.—Bonds of 1894, coupon and registered; coupons.

Newark & Bloomfield RR. Co.—Coupons paid by Delaware, Lackawanna & Western RR. Co.

Oxford Iron Co.—Coupons.

Syracuse, Binghamton & New York RR. Co.—First-mortgage bonds, coupons paid by Delaware, Lackawanna & Western RR. Co.

Vulcan Iron Works.—Coupons.

PHILADELPHIA.

Chesapeake & Ohio Canal Co.—Maryland loan coupons.

Cumberland Valley RR.—Interest.

Pennsylvania RR. Co.—General mortgage registered bonds; interest.

Philadelphia & Reading RR. Co.—Loan mortgage; coupons.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 4th nst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	.....	.....
St. L., I. M. & S. R. Co.	100	14½	14½	14	100
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co.	50	.....	.....	54½	.....
*Penn. Salt Mf'g Co.	50	.....	.....	74½	.....
*Westm'land C. Co.	50	.....	.....	53	.....
*Buck Mt. Coal Co.	50	.....	.....	35	.....
*Schuyl. Nav. Co.	50	.....	.....	.....	.....
†B. & O. RR. Co. 1st pf	.....	103¼	103	103	67
†B. & O. RR. Co. 2d pf	100	.....	.....	99	.....
" " " com	90	94	91	90⅛	39
†George's C'k C. Co	100	.....	.....	55	.....
†S. Clara M'g Co.	100	.....	.....	25	.....
†Atlantic Coal Co.	10	.....	.....	80	.....

BONDS.	Prin'l. When Due.	Int'est. When Due.	High'st.	Lowest	Amount.
D., L. & W., 7s, conv	1891	J. & D.	.....	.....	.....
" " " " 2d mtge.	1882	M. & S.	104	.....	$1,000
N. J. C., 1st mtge. new	1890	F. & A.	115¼	114½	17,000
" " " 1st mtge., con	1899	Q.	87	84½	*283,000
" " " convt.	1902	M. & N.	86¼	83¾	*93,000
Lehigh & W. B., con	1899	Q.	75	.....	†49,000
Am. Dock & Imp. 7s	.....	J. & J.	.....	64	.....
St. L. I. M. & S., 1st mt	1892	F. & A.	.....	111	.....
Ches. & O., 1st mtge	1899	M. & N.	.....	30	.....
D & H C Co., 1stm. rg	1884	J. & J.	96	.....	1,000
" " " " " "	1891	J. & J.	98	.....	1,000
" " " " " m. loan cp	1894	A. & O.	.....	96	.....
" " " " " " rg.	1894	A. & O.	.....	.....	.....
" " " " new mge.	.....	.....	.....	.....	.....
*L. V. R., 1stm. 6s. cp.	1898	J. & D.	.....	.....	.....
" " " " rg.	1898	J. & D.	112	111¾	6,000
" " " 2d m. 7s, rg.	1910	M. & S.	116	.....	1,000
" " " con. m. 6s, rg	1823	J. & D.	102	.....	12,000
" " " 6s cp.	1923	J. & D.	103	102	7,000
*Pa. RR., 1st m. 6s, cp	1880	J. & J.	104⅛	.....	1,000
" " g. m., 6s, cp.	1910	J. & J.	111½	111	7,000
" " " 6s, rg.	1910	A. & O.	111	.....	9,000
" " con. m. 6s, rg.	1905	Q.	.....	102	.....
" " " 6s, cp.	1905	J. & D.	103	.....	3,000
" " new loan, 5s	.....	.....	112	.....	4,000
*P. & R. R., 1st m. 6s, R. C. 43-44	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J	.....	.....	.....
P. & R. R., 2d m. 7s cp	1893	A. & O.	.....	.....	.....
" " " scrip	1882	J. & J.	50	49½	3,000
" " " in. m. 7s, cp	1896	J. & D.	.....	.....	.....
" " " c. m. 7s, cp.	1911	J. & D.	105	103½	13,000
" " " " 7s. rg.	1911	J. & D.	105	.....	2,000
" " " cvt. 7s, R. C	1893	J. & J.	.....	.....	.....
" " C. & I. Co., Deb 7s, R. C.	1892	M. & S.	.....	.....	.....
& R. C. & I. Co., m. 7s, R. C.	'92-3	various	.....	.....	.....
*L. Nav. Co., 6s, rg. m.	1884	J. & D.	103½	103	10,200
" " RR., rg. m.	1897	F. & A.	.....	106	.....
" " cvt. co. G. R.	1894	M. & S.	.....	.....	.....
" " " Gold R. C.	1897	J. & D.	92½	.....	13,000
" " con. m. 7s, rg.	1911	J. & D.	.....	.....	.....
*P. & N. Y. C., 7s, R. C.	1896 / 1906	J. & D.	.....	.....	.....
*Pa Canal, 6s. cp.	1910	J. & J.	.....	60	.....
*Schuyl. Nav., 1st m. 6s. rg.	1897	M. & A.	.....	90	.....
*Sus. Coal, 6s, rg.	1911	J. & J.	.....	.....	.....
†Balt. & O. RR., 6s.	1880	J. & J.	.....	.....	.....
" " " " 6s.	1885	A. & O.	107	104	2,500

Total transactions for the week..... $538,700

* Assented. † $24,000 assented, selling at from 49½@52½.

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend.	Rate per Ann.	Mar. 29. H.	Mar. 29. L.	Mar. 31. H.	Mar. 31. L.	Apr. 1. H.	Apr. 1. L.	Apr. 2. H.	Apr. 2. L.	Apr. 3. H.	Apr. 3. L.	Apr. 4. H.	Apr. 4. L.	SALES.
	$		$	Mo. Y.	Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan. 77	2½	.....												
Del. & H. C.	24,000,000	240,000	100	Aug 76	4	40⅜	39⅜	41	40	41¾	40¾	41¼	40½	41⅞	41	49	41⅞	8,568
D., L. & W. RR.	26,000,000	524,000	50	July 76	2½	48¾	46½	48¼	47⅜	49⅛	47⅞	48⅛	47⅜	49½	48⅛	50⅜	48¾	149,810
Lehigh C. & N.	3,000	208,971	50	Nov 76	1½	15	14¾	14⅞	14⅜	15	14⅜	15	15	15¼	15	15⅛	15⅜	1,414
Leh. V. y. R.	27,228,855	540,858	50	Mch 79	1	4	3½	3½	3½	3⅝	3½	3½	3½	3½	3½	35	3½	788
Maryl'd Coal	4,400,000	44,000	100	Jan. 76	1½	1½												
N. J. C. R. R.	20,600,000	206,000	100	Apr 76	2½	39⅛	37¾	38⅝	38	39¼	38¾	40	38⅝	41⅛	39⅝	42⅜	40⅞	81,784
Penn. Coal.	5,000,000	100,000	50	May 78	3													
Penn. R. R.	68,870,200	1,337,404	50	Nov 78	2	34⅜	34½	34⅛	34¼	34⅜	34⅜	35⅛	34⅝	35¼	34¾	35⅛	35	56,254
Ph. & R. R. R.	34,278,175	685,563	50	Jan 76	4 2½	10	12¾	12⅝	12¾	12⅝	12⅜	12⅝	13	12⅝	13⅛	13	13⅜	13⅛	7,296

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497

Total Sales.....305,914.

Gas Stocks.

NEW YORK, Friday Evening, April 4, 1879.

Gas stocks are dull and heavy, having the effect of settling prices to a lower basis, from which the market probably will not soon recover.

Brooklyn is at present agitated over the question of street lighting. The Board of Aldermen recently passed resolutions awarding the Automatic Gas-Lamp and Lighting Co. the contract for lighting the city with naphtha during the present year, at the rate of $19.83 per lamp. The Mayor of Brooklyn has sent a lengthy message to the Aldermen, holding that the plan submitted was new, and, to a certain extent, experimental, and has vetoed the bill. Whatever the result may be, it has already had its effect in reducing the price of gas about $3 per lamp, or to $23 per lamp per annum. He also recommended that a new contract be made with the gas companies.

The Hartford Gas-Light Co. has applied for amendment of charter, enabling it to introduce steam-heating.

Senator White, of Chicago, has introduced a bill in the Illinois Legislature to restrict the prices that may be charged for gas in cities of that State.

Middletown (O.) Gas Co.—A bill has passed the Ohio General Assembly authorizing the Council of Middletown to make a contract with the above company for a period not to exceed ten years.

Charleston (S. C.) Gas-Light Co.—The annual meeting of this company was held March 3d. The reports of the President and Superintendent were both read. During the year 47,678,471 cubic feet of gas were made; dividends paid, $45,996; surplus, $12,308.97. Cancellation of 2008 shares of capital stock owned by the company was recommended. The report and recommendation were adopted.

Le Roy, Genesee County, N. Y., has a well delivering salt water and natural gas. The delivery is said to be more than enough to light the town, which has a population of over 2000.

Denver, Colo., is to have an extension of its gas facilities, the City Council having ordered 50 additional lamps, which will make in all 279 lamps.

Whitby, Ont.—The 42 street lamps cost $352 to erect and $444 last year for oil and lighting. Their number is to be reduced to twelve.

The Savannah (Ga.) Gas-Light Co. has reduced the price of gas to $3.50 per thousand, 10 per cent off for prompt payment, reduction to take place April 1st. This does not extend to parties using carbureters.

The Lyons (N. Y.) Gas Co. has reduced the price of gas from $4 to $3 per thousand.

COUPONS and Interest on the bonds of the following companies fall due during the present month:

Cedar Rapids Gas-Light Co.—Coupons.
Clinton ( ) Gas-Light and Coke Co.—Coupons.
Citizens' Gas Co., Brooklyn.—Interest.
Hyde Park Gas-Light Co., of Chicago.—Coupons.
Memphis Gas-Light Co.—Coupons.
Nebraska City Gas-Light Co—Coupons.
Northwestern Gas-Light and Coke Co.—Coupons due.
Yonkers Gas-Light Co.—Coupons.

AUCTION SALES:

Manhattan Gas-Light Co.—29 shares, at 193½ per share.
Washington (D. C.) Gas-Light Co.—11 shares, at $35 per share.
South Boston Gas Co.—12 shares, at $101½ per share.
Boston Gas Co.—1 share, at $750 per share.
Lynn (Mass.) Gas Co.—10 shares, at 75 per share.
Kidder Coal-Gas Co.—13 shares, at 12½ per share.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	DIVIDENDS. Am. of last.	DIVIDENDS. Date of last.	QUOTATIONS. Bid.	QUOTATIONS. As'd.
	$		P. ct.				
Mutual, N. Y....	5,000,000	$100	6	1½	Apr., '79	72	76
" Bonds...	90,000	1,000	6	3½	Feb., '79	98	100
N. York "	4,000,000	.....	8	4	Nov, '78	100	102
Metrop. "	2,500,000	100	10	5	Feb., '79	115	125
" Certfs...	1,000,000	.....	7	3½	Feb., '79	100	102
Harlem "	1,850,000	50	6	3	Feb., '78	35	45
Manhat. "	4,000,000	50	.....‡	5	Feb., '79	185	195
Brooklyn, Bkln.	2,000,000	50	15	5	Jan., '79	138	142
Nassau	1,000,000	25	.....‡	3	Jan., '79	70	75
" Certfs...	700,000	1,000	7	3½	Nov. '78	96	100
People's.....	1,000,000	10	.....‡	3½	Jan., '79	26	30
" Certfs....	300,000	1,000	7	3½	Jan., '79	75	80
" Bonds....	325,000	.....	7	3½	May, '78	90	96½
Metrop. "	1,000,000	100	5	2½	Nov., '78	50	60
W'msb'g "	1,000,000	50	8	1½	Jan., '79	80	90
" Certfs...	1,000,000	.....	7	3½	Jan., '79	90	95
Citizens'.....	1,200,000	20	.....‡	3	Jan., '79	70	80
" Certfs...	320,000	1,000	7	3½	Oct., '78	90	100
J. C., N. J.....	750,000	20	10	7½	Jan., '79	140	150
Municipal, N. Y.	466,000	50	.....	.....	.....	100	115
" Bonds..	750,000	.....	.....	.....	.....	95	...
.....	...	...	...	...	...	.....	...

Gold and Silver Stocks.

NEW YORK, Friday Evening, April 4, 1879.

The mining stock market has been rather quiet during the past week, with fairly steady prices, strengthening at the latter end of the week.

The San Francisco stocks have been somewhat neglected. We note sales as follows; Bodie, 100 shares, at 7¼; California, 160, at $5⅛@$5¼; Consolidated Virginia, 545, at $5@$5⅜; Crown Point, 50, at $5⅜; Eureka Consolidated, 5 shares, at $15½; Grand Prize, 190 shares, at $3.50@$3.75; Kentuck, 100, at $4.90; Independence, 1520, at $1.40 @$1.55; Consolidated Imperial, 475, at $1.45@ $1.50; Julia, 50, at $4¼; Leviathan, 450, at 20@ 25c.; Tip Top, 25, at 80c.; Tuscarora, 6200, at 9@ 12c.; Hussey, 2000, at 25c.

The mining stocks at the New York Stock Exchange have been rather quiet. We note sales as follows: Homestake, 460 shares, at $82½@$83; Ontario, 70 shares, at $40@$40¼; Quicksilver, preferred, 100, at $34¼; Quicksilver, common, 200 at $12. Although the report that all arrangements between the Sutro Tunnel and the Comstock mines have been completed is confirmed, yet the stock of the Tunnel Co. has not been affected, but has been very steady, with sales of 3963 shares, at $4⅛@$4¼.

There has been a fairly active business in the leading stocks on the Mining Exchange. The sales of Findley have amounted to 3300 shares, at 58@60c., there being a much stronger demand for this stock owing to the improved prospects of the mine. Hukill records sales of 200 shares, at $3. There are evidences of a quiet effort to take in as much of this stock as possible, at the low prices which have prevailed of late, by parties who should be in a position to know the value of the mine. A telegram from the mine to-day says:

"The whole vein has been uncovered by a new shaft, showing a width of two feet of fine ore. The late splendid body of ore in the same vein is showing as well as ever, and the entire property is in excellent condition.

Arrangements are now being made to run the large accumulation of placer matter as soon as the weather will permit.

Moose has been very active, although weak. The sales aggregate 8200 shares, at $2.90@$3.25, closing at $3.05. Plumas has been very quiet, the sales only amounting to 400 shares, at $3.30@$3.35. Advices from the mine note the continuance of the enlarged vein. King's Mountain records a sale of 100 shares, at $1.40. Leadville has been dealt in to the extent of 4825 shares, at $2.65@$2.85.

The fancies have been very active, although not so much so as during several previous weeks. We note sales as follows: American Flag, 800 shares, at 21@ 22c.; Bertha & Edith, 129,900, at 26@33c.; Buckeye, 103,700, at 48@37c.; Dahlonega, 14,200, at 21@26c.; Gold Placer, 42,150, at 22@29c.; Granville, 1500, at 18@20c.; Lacrosse, 27,600, at 26@32c.

Mr. Frank G. Brown has been made Vice-President of the Horn-Silver Mining Co. The company has sold 40,000 shares of its stock at $15, and now offers 25,000 shares at $18.50 per share. We hope soon to give the substance of the very elaborate report of Mr. Hooker. His estimate of the net value of the ore in sight exceeds the estimate of Messrs. Platt and Clarke, published in our last. The stock of this company is meeting with much favor, and we expect to see the 25,000 shares now offered speedily disposed of.

WILD SPECULATION IN THE FANCIES.

For several weeks past there has been a very wild speculation in the fancies, and these properties, which are not now earning any-thing, some of which have never earned a cent, nor given promises of doing so, have secured a market value through the Mining Exchange of say $471,900.

The following shows the number of shares of each company and the value of the properties at the average prices of the stocks at the Mining Exchange during the week:

Company.	No of shares.	Average selling price.	Total market value of property.
American Flag.....	60,000	21½ cts	$12,900
Bertha & Edith.....	500,000	30 "	150,000
Buckeye.....	400,000	42 "	168,000
Dahlonega.....	250,000	24 "	60,000
Gold Placer.....	200,000	26 "	52,000
Lacrosse.....	100,000	29 "	29,000
Total.....			$471,900

We might, perhaps, include others; but the above list gives the leading stocks coming under this head. American Flag sells at $12,900, or, more properly, is "washed" at that figure, for it receives but little, if any, genuine attention. However, $12,900 for not even a foot of property is doing very well. Bertha & Edith is selling at $150,000. This property has never earned a cent; has no important developments or mining improvements. There is talk of—we do not remember how many—veins assaying some high figures. Any one can procure dozens of properties in the South that promise just as well, for one twentieth of the amount at which this property is now selling, while the Findley mine, which has 40 stamps at work, and is actually earning from $2000 to $3000 per month, is selling at less money. The Dahlonega mine is selling at $60,000. This property has a rattle-trap 10-stamp mill, and has not only not earned any money, but has used up, with no apparent return, some thousands of dollars secured as working capital about a year ago. The mine, in years past, is reported to have yielded some profit, and some months ago a new bonanza was reported as discovered, but we have seen no practical results from it. At $10,000 this mine would probably be selling high. Gold Placer is selling at $52,000. This company owns some placer ground which no person of experience in Colorado would give $20,000 for, and, to make it available, probably from $50,000 to $100,000 would have to be expended in improvements. Lacrosse has held the same worthless position for so many years, and the attention of our readers has been drawn to it so often, that it seems like a waste of time to call attention to the ridiculously exaggerated present selling price of $29,000. Buckeye came on last year with claims of thousands of feet of rich veins, and dispatches were constantly received of new acquisitions of property. We advised our readers at the time to let the stock alone as being very suspicious. The latest claim was "carbonates in the King of the Valley mine." Although this was published by a Denver *Tribune* correspondent, yet he afterward noted that he had been imposed upon, and that the statement was incorrect. This company's property has received an immense amount of advertising. As an investment we advise our readers to let it alone at any price. As a gamble they can watch the manipulation as well as we, and judge for themselves, and if they lose we shall waste no sympathy on them.

There has certainly been a large amount of legitimate speculation in these stocks; but as they are far above their actual value, the insiders will some day be found to have well unloaded, and then look for a crash, to be followed by purchases by the old operators for another rise such as we now have.

That the interest in mining investments on this market is increasing is beyond question; yet we were hardly prepared to credit such an increase as is given in the following: For the week ending March 22d, the total dealings in mining stocks at our exchanges aggregated about $425,000. When we consider that perhaps as large a business was done among the bankers, we may well say that the interest in the East is assuming vast dimensions. The operations on the San Francisco market for the week nearly corresponding to the above, March 12th to 18th, amounted to $1,175,000. Adding the dealings in Boston and Philadelphia to those reported on our own market, and our Eastern transactions in mining stocks make a very favorable showing compared with those of the West.

The Plumas National Quartz Mining Company has declared a dividend of 8 cents per share on the capital stock, payable on the 18th instant. Transfer-books close on the 12th and open on the 20th.

A letter received from the Cheyenne mine to-day, states that a clean-up will be made on the 5th inst., from the recent run of the 20-stamp mill. Also that the company is trying to purchase 10 additional stamps, and are making efforts for the renting of 30 more, making 60 stamps in all. The purchase of the Hoodlebug mine, by this company, which adjoins the Cheyenne, is confirmed.

The King's Mountain mine in North Carolina made a very important strike on the 31st ult. This mine has the deepest workings of any gold mine on the Atlantic coast, and the cross-cutting from the main shaft has been looked to with a great deal of interest as proving the value of our Southern mines as depth is attained.

The King's Mountain Mining Co. was organized in December, 1877, and operations immediately began. A two-compartment shaft, 5 × 9 ft., has been sunk to a depth of 300 ft. A cross-cut, driven from the 270-ft. station, cut the vein, which had a dip of 40 degrees, at a distance of 135 ft. A telegram, received yesterday, stated that the vein had been cut to a distance of 5 ft., and the foot-wall was not yet reached.

W. A. Stanton, the superintendent, brought on some samples of the ore, which were given to Prof. F. A. Genth, of Philadelphia, for assay. Prof. Genth writes Gov. Curtin as follows, relative to these specimens: "Four fifths of the whole showed no free gold with a powerful lens, but only a small quantity of copper and iron pyrites; the other one fifth of the whole showed a small quantity of free gold to the naked eye; also, some telluride of lead and pyrites. The whole sample, as submitted to me, gave gold at the rate of $7\frac{13}{100}$ oz. per ton of 2000 lbs., equal, in coin value, $147.38."

The mine's first working dates back about 40 years,

GENERAL MINING STOCKS.

Dividend Paying Mines.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount per share of last.	DIVIDENDS. Total paid to date.	DIVIDENDS. Last Dividend.	Rate p. An	HIGHEST AND LOWEST PRICES PER SHARE IN CURRENCY AT WHICH SALES WERE MADE. Mar. 29. H.	Mar. 29. L.	Mar. 31. H.	Mar. 31. L.	Apr. 1. H.	Apr. 1. L.	Apr. 2. H.	Apr. 2. L.	Apr. 3. H.	Apr. 3. L.	Apr. 4. H.	Apr. 4. L.	SALES.
Alps	Nev.	800		30,000		204,000	Aug. 1878 $1 00	37,500	Apr. 1876 $0 65													
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,496,200	Feb. 1879 1 00	15,397,200	Apr. 1876 1 00													
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*		90,930	Nov. 1878 15												2	300
Bobtail Tunnel, g.	Col.		100,000	20,000	5	52,000	July 1873 0 30	56,000	Dec. 1879 40													
Bodie, g.	Cal.		5,000,000	50,000	100	25,000	Feb. 1878 0 50	800,000	Jan. 1879 1 00									7½				100
California, g. s.	Nev.	600	54,000,000	540,000	100			30,240,000	Jan. 1879 1 00		5⅛		5¼		5¼			5⅛		5¼		100
Calumet & Hecla, c.	Mch		2,000,000	80,000	25	1,200,000		13,850,000	Feb. 1879 5 00		172	172			173		173¾					36
Central, c.	Mch		500,000	20,000	25	100,000	June 1862 0 65	1,260,000	Feb. 1877 5 00													
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept. 1878 5 00	3,080,000	Feb. 1872 1 00													
Copper Falls, c.	Mch		1,000,000	20,000	50	535,000	May. 1876	100,000	Nov. 1871 1 00													
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June 1873 3 00	40,500,000	June 1878 1 00		5⅝		5⅝	5¼	5¼		5¼	5	5⅛	5	5¼	5	545
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr. 1878 0 50	78,000	May. 1865 8 ⅓													
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*																
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,973,370	Dec.. 1878 1 00	11,588,000	Jan.. 1875 2 00				5⅝									50
Daney	Nev.	2,000		108,000		91,800	Nov. 1878 0 20	56,000	July 1863													
Eureka Cons., g. s. l.	Nev.		5,000,000	50,000	100	100,000	May. 1876 1 00	3,600,000	Feb.. 1879 2 00		15½											5
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100			2,149,000	Apr. 1878 0 25													
Findley, G	Geo.		200,000	200,000	1			40,000	Feb . 1879 10		58c				59c	58c	59c				60c	3,300
Franklin, c.	Mch		500,000	20,000	25	360,000	June 1876 5 00	585,000	Nov. 1871 1 00													
Gila	Ariz			100,000		70,000	Jan. 1879 0 25	50,000	Aug. 1875 0 25													
Gould &Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,936,000	Mar. 1879 1 00	3,826,800	Oct. 1870 10 00													
Grand Prize	Nev.	1,500		100,000		100,000	July. 1878 1 00	400,000	Feb. 1878 1 00				3.75	3.60							3.50	100
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	3,082,000	Mar. 1879 1 00	1,598,000	Apr. 1871 5 00													
Homestake, g.	Dak		10,000,000	100,000	100			60,000	Feb.. 1879 30				32¾		33		32⅞	32½			32⅞	32¾	460
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*			Dec. 1878 0 10		3												200
Independence	Nev.	1,500		100,000		75,000	Feb.. 1878 15	150,000	Nov. 1878 25		1.55	1.45					1.40				1.45		1,520
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878 1 00	1,252,000	Mar. 1870 5 00												4,90	109
K. K. Cons.	Nev.			50,000		30,000	Jan.. 1879 1 00	50,000	Sept. 1873 0 25													
Leeds	Uth.	3,000		60,000				78,000	Oct.. 1878 0 15													
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	225,000	Mar . 1879 50	162,500	Dec. 1876 0 50													
Manhattan	Nev.			50,000		50,000	Oct.. 1878 1 00	400,000	Feb. 1877 1 00													
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar.													
Minesota, c.	Mch.		1,000,000	20,000	50	436,000	1869 1 00	1,820,000	Mar. 1876 0 50													
Modoc	Cal.	4,000		100,000		480,000	Feb.. 1879 0 50	50,000	Dec. 1876 0 50													
Moose	Col.	39,000	2,000,000	200,000	10	*		550,800	Mar. 1878 0 25		3.25	3	3	2.90	3.10	3	3.15	3.05	3.20	2.95	3.10	3	8,200
National, c.	Mch.		500,000	20,000	25	195,000	Oct.. 1875 1 00	360,000	Oct. 1873 1 00													
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*		20,000	Mar. 1877 0 20													
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100			1,425,000	Feb. 1878 1 00													
Ontario..	Uth.	3,000	10,000,000	100,000	100			2,050,000	Mar. 1879 50				40		40½		40¼					70
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov. 1878 1 00	1,394,400	Mar. 1864 4 00													
Pewabic, c.	Mch.		500,000	20,000	25	185,000	June 1868 3 00	460,000	July 1873 1 00													
Phoenix, c.	Mch.		1,000,000	20,000	50	817,500	Sept. 1870 3 00	10,000	Dec. 1876 1 00													
Plumas	Cal.		1,000,000	100,000	10			130,000	Mar. 1879 8		3.30				3. 25							400
Quincy, c.	Mch.		200,000	20,000	10			2,230,000	Feb. 1878 5 00		10¼											230
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	730,000	Jan.. 1879 1 00	3,075,000	Sept. 1873 3 00													
Ridge, c.	Mch.		500,000	20,000	25	200,000		90,000	Feb. 1875 1 00		75c											360
Rye Patch	Nev.	1,600		30,000		157,500	Dec.. 1878 1 00	105,000	Dec. 1877 0 25													
St. Joseph, l.	Mo.	2,000 acs.	1,000,000	100,000	10			250,000														
Savage, g. s.	Nev.	800	11,200,000	112,000	100	4,196,500	Feb. 1879 1 00	4,460,000	June 1869 3 00													
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*			May 1877 0 10													
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct.. 1878 3 00	102,000	Jan. 1871 1 00													
Silver Islet	Mch					*					58¾	58			58½	58	57					400
Silver King	Ariz	1,500	10,000,000	100,000	100			450,000	Nov. 1878 0 50													
Standard	Cal.			50,000		50,000	July 1878 1 00	900,000	Feb.. 1879 1 00													
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120,000	100	3,018,000	Jan.. 1879 1 00	2,184,000	Aug. 1871 2 50													
McClinton	Cal..	1,000		60,000		45,000	Dec.. 1878 0 25															

Non-Dividend Mines.

Allouez, c.	Mch.		1,000,000	20,000	50	940,000	May 1876 5 00																
Alpha, g. s.	Nev.	306	3,000,000	30,000	100	240,000	Mar. 1878 1 00																
Alta	Nev.	600		108,000		1,101,000	Feb. 1879 1 00																
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*							21c		21c		22c						800
Andes	Nev.	2,000		100,000		355,000	Oct. 1878 0 25																
Baltimore Cons.	Nev.	1,050		84,000		1,015,000	Apr. 1878 0 50																
Benton	Nev.	600		108,000		91,800	Dec. 1878 0 50																
Bechtel	Cal.			60,000		81,000	Feb.. 1879 0 10																
Bertha & Edith, g.	Vir.	645 acs.	500,000	500,000	10	*																	
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	538,590	Jan.. 1879 1 00				30c	26c	31c	29c	31c	29c	32c	29c	33c	29c	32c	30c	129,900
Boyle	Nev.	600		108,000		16,210	Aug. 1878 0 15																
Buckeye	Col.		2,000,000	400,000	5	*					48c	43c	48c	46c	48c.	39c	43c	39c	43c	37c	42c	37c	103,700
Bullion, g. s.	Nev.	943½	10,000,000	100,000	100	3,002,000	Dec. 1878 1 00																
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	1,590,000	Jan. 1879 0 50																
Cashier	Col.		500,000	250,000	2	*																	
Challenge	Nev.	90		50,000		10,000	Nov. 1878 0 20																
Cleveland, g	Col.	3,715	250,000	25,000	10	*																	
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	100	875,000	Feb.. 1879 0 20				1.50		1.50		1.50	1.45							475
Con. N. Slope & E. T.C.	Col.	15,000	500,000	10,000	50																		
Con. Pacific	Cal.	1,400		60,000																			
Dahlonega	Ga.		250,000	250,000	1						22c	21c	23c	22c	23c	22c	25c	23c	26c	24c	26c	25c	14,200
Dana, c.	Mch.		500,000	20,000	25	68,000	Jan.. 1863 0 50																
Dawson, s.	Ont.		1,200,000	60,000	20		1878																
Day	Nev.	1,500		100,000		70,000	Feb.. 1879 0 15																
Dayton	Nev.	1,600		100,000		750,000	Apr. 1878 0 25																
De Frees	Ariz	1,500		100,000		115,000	Oct.. 1878 15																
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July 1876 41⅔								4½								125
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	480,000	Feb.. 1879 1 00																
Gold Placer, g.	Col.		5,000,000	200,000	25						24c	22c	25c	24c	24c	23c	26c	24c	27c	25c	29c	25c	42,150
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*	0 50				20c		20c	19c							18c		1,500
Humboldt, c.	Mch.		500,000	20,000	25	100,000	Sept 1878 0 15																
Hussey	Nev.	4,500		100,000		110,000	Jan.. 1879 0 15				25c												2,000
International, s.	Ont.		1,200,000	60,000	20						45c												150
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	872,500	Jan. 1879 1 25																
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,763,500	Jan.. 1879 1 00																
King's Mountain, g.	N. C.		1,200,000	120,000	10	*																	
Kossuth	Nev.	2,700		108,000		421,200	Aug. 1877 0 15														1.40		100
Lacrosse	Col.	3,900	1,000,000	100,000	10	*					30c	29c	31c	29c	30c	29c	32c	29c	31c	28c	29c	26c	27,000
Leadville	Col.										2.85	2.75	2.75	2.70	2.75	2.65	2.80	2.70	2.75	2.60	2.70		4,825
Leviathan	Nev.	2,000		100,000		265,000	Mar. 1879 25						25c	22c	25c						20c		450
Luzerne	Col.	4,200	5,000,000	500,000	10	*																	
Madison, c.	Mch.		500,000	20,000	25	123,000	Sept 1876 0 10																
Mariposa preferred.	Cal.	44,387	5,000,000	50,000	100	1,425,000	June 1877 1 00																
" common.	Cal.	acres.	10,000,000	100,000	100	1,425,000	June 1878 1 00																
McCracken	Ariz	4,500		100,000		100,000	Oct . 1878 0 50																
Martin White	Nev			100,000		650,000	Dec. 1878 1 50																
Mesnard, c.	Mch.		500,000	20,000	25	160,000	Apr. 1878 0 50																
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May. 1878 0 50																
Minnietta Belle	Cal.	1,500		100,000		75,000	Apr. 1878 0 50																
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*	1878																
Navajo	Nev.	1,500		100,000		145,000	Feb.. 1879 0 20																
New York	Nev.	1,000		100,000		80,000	Feb.. 1879 0 40																
Occidental	Nev.	1,700		40,000		72,500	Feb. 1877 0 25																
Orig. Keystone	Nev.	1,500	1,000,000	100,000	10	50,000	Oct. 1878 0 50																
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Jan.. 1879 3 00																
Osceola, c.	Mch.		1,000,000	40,000	25	2,567,880	Nov. 1877 3 00																
Petherick, c.	Mch.		500,000	20,000	100	165,533	Mar. 1876 0 50																
Pleasant View, g.	Col.	1,200	200,000	20,000	10	*																	
Quicksilver preferred.	Cal.	8,500	4,291,300	42,913	100																34¼		100
" common.	Cal.	acres.	5,708,700	57,087	100	*															12		200
Rockland, c.	Mch		500,000	20,000	25	495,000	Jan.. 1874 1 00																
Seg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr. 1876 5 00																
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,350,000	Jan. 1879 0 50																
Silver Prize	Nev.	1,500		100,000		65,000	Feb. 1879 0 25																
Star, c.	Mch.		500,000	20,000	25	265,000	Mar. 1876 0 50																
Superior, c.	Mch.		500,000	20,000	25	340,000	Mar. 1878 0 25																
Sutro Tunnel	Nev.		20,000,000	2,000,000	10				0 50														
Tiptop	Ariz			100,000		120,000	July 1878				4¼				4½	4¼	4⅜	4¼	4⅜	4⅛	4¼		6,200
Tioga	Cal.	1,500		100,000		60,000	Dec. 1878 0 30				80c												
Trio	Col.	1,250	150,000	150,000	1																		25
Trojan	Nev.	1,500		100,000		240,000	Oct. 1878 0 25																
Tuscarora	Nev.			100,000		20,000	Nov 1878 0 0.				10c		12c	9c	10c		10c	9c			10c		5,250
Union Cons. g. s.	Nev.		10,500,000	100,000	100	310,000	Apr. 1878 0 25																
Utah	Nev.	1,000		20,000		780,000	Feb. 1879 3 00																
Ward	Nev	1,200		110,000		99,000	Jan. 1879 0 30																
Wells Fargo	Nev.	1,500		108,000		216,000	Sept. 1878 0 50																

Total Assessment levied to date $64,917,513

g. Gold. s. Silver. l. Lead. c. Copper. * Non-Assessable.
Total Dividends paid to date $153,712,330

Total Sales for the week ..... 855,079.

and a total production of about three quarters of a million dollars is reported. The present workings are about 50 feet below the old workings, which have caved in. Very little water is found in the vein where last struck.

The company has a 40-stamp mill, 20 stamps of which it is expected to start on the "roughs" from placer working, and such ore as may be taken out from the mine in making developments.

The Findley mine reports a production of 347 oz. gold for March, or about $3500. After deducting expenses, this will leave considerably over 1 per cent on the capital stock applicable for dividends, and, for a Southern mine, that is a very good showing.

The subscription to the stock of the Buell Gold Mining Company is progressing. The books will be closed on the 26th inst. This stock appears to be as cheap as any that has ever come on the market, and has received the very strongest indorsement from the best of Colorado's mining men. This mine has produced about $750,000, and it is the belief that a few thousand dollars invested in dead-work will again place it on the producing list.

A correspondent writes: "I send you to-day, a prospectus of the Alpine Silver Mining Company, of Colorado. Please inform me if it would be a safe investment?" We know nothing about the property, but men who will get out such a prospectus are by no means safe to follow. They are either knaves or fools. They say the mineral streak of the Yellow Jacket mine (one of their claims in Colorado) is 6 to 8 inches wide; a tunnel is cut along the vein a distance of 95 feet; and, with this for development, they estimate the ore in sight at 5000 tons!! They state that the Amna mine has a shaft down 70 feet, near the west end of the lode, and there is also a 20-foot shaft near the center of the lode, both of which are in solid ore. The pay streak is 14 to 20 inches. This mine is also estimated to have 5000 tons of ore in sight. The superintendents, John Splane and Ines Gilbertson, *estimate* a net income of $1000 per day, or say $300,000 per annum, with every prospect of a large increase. The capital stock of this company is $2,000,000, divided into 200,000 shares of the par value of $10 each, and the stock is offered at $1.50 per share, or $300,000 for the whole property. The President, J. D. Splane, and the Secretary, J. L. Thompson, say: "We offer this stock at $1.50 per share, fully believing that the return will be ten-fold in the short space of one year." How these prospects (worth perhaps a few thousand dollars for the whole lot) can return to the stockholders $3,000,000 in a year, on a net income of but $300,000, can only be figured up by some "mining bureau." The same officers quote the Little Pittsburg mine, of Leadville, to show the value of their mines, while there is no connection whatever, except in being in the same State. Our readers can make their choice, and put it very strong—knaves or fools.

REVIEW OF THE SAN FRANCISCO MARKET.

With the exception of an improvement in a few of the outside stocks, the San Francisco list still tends downward. The final ratification of the compromise between the Sutro Tunnel Company and the mining companies was effected on the 2d inst., and Mr. Sutro, on the same date, started for Virginia City to begin work on the sub-drain, on which it is proposed to employ at least a thousand men. Mr. Sutro calculates that the tunnel will be ready for use within sixty days. He estimates that the daily output of ore after the mines are drained and the connections with the tunnel are made, and cross-cuttings under way, will average 3000 tons, of which 500 tons will be of the class yielding over $40 per ton.

In connection with this, we note that the Bank of Nevada has reduced its loaning rates on the principal Comstock and a few outside stocks, to brokers only, as follows: Sierra Nevada, $20; Union, $25; Ophir, $15; Mexican, $15; Best & Belcher, $8; Yellow Jacket, $5; Chollar, $18; Gould & Curry, $4; Hale & Norcross, $4; Savage, $4; Alpha, $3; Utah, $5; Consolidated Virginia, $3; California, $3; Overman, $4; Crown Point, $2; Belcher, $2; Alta, $2; Bullion, $2; Exchequer, $1; Eureka Consolidated, $10; Grand Prize, $1.50.

This, it will be observed, is discounting bonanzas quite liberally. That the present course of the Comstock list is suspicious is but reiterating the opinion of nearly every one at all conversant with the situation, and the general feeling is that a "big deal" is now in progress. We reiterate our advice to investors to hold if they have and to keep out if they are out. Such management makes any investment unsafe.

SAN FRANCISCO MINING STOCK QUOTATIONS.
Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS Mar'h 28.	Mar'h 29.	Mar'h 31.	April 1.	April 2.	April 3.	Opening. April 4.
Alpha	18¾	18¼	.....	17¼	17¼	17⅛	17
Alta	5¼	5⅛	5	4¾	4⅝	4⅝	4¾
Argenta	....	....	....	....	....	....	....
Bechtel	....	....	....	....	....	....	....
Belcher	8	8	6½	6½	6	5¾	5⅝
Belle Isle	....	....	....	....	....	....	....
Benton	....	....	....	....	....	....	....
Best & Bel.	16	16½	15½	16	14¾	14⅝	14½
BlackHawk	....	....	....	....	....	....	....
Bodie	6¾	7	6¼	7	7	8	.....
Booker	....	....	....	....	....	....	....
Bullion	5¼	5¼	4⅞	5⅛	5	5	4⅞
Bulwer	....	....	....	....	....	....	....
Caledonia	2⅛	2⅛	2⅛	2¼	2⅛	2¼	2⅛
California	5⅛	5	5	5	4⅞	5	5
Chollar-Pot	43½	46	43	43¼	44½	44	40½
Confidence	....	....	....	....	....	....	....
Con. Imp	....	....	....	....	....	....	....
Con. Va	5¼	5	5	5	5	5	5
Crown P'int	5¼	5¼	4¼	4⅞	4⅝	4⅝	4⅛
Endowm'nt	....	....	....	....	....	....	....
Eureka Con	16¾	17	17⅞	18½	18	18	.....
Exchequer	5	5	4¾	4⅞	4¾	4¾	4¾
Goodshaw	....	....	....	....	....	....	....
Gould &Cur	8	8	7¼	7⅜	7¼	7	7
Grand Prize	3⅝	3½	3½	3⅝	3⅝	3½	.....
Hale & Nor.	11⅝	11⅞	10¾	7	10¼	10¼	9½
Hamburg	....	....	....	....	....	....	....
Homestake	....	....	....	....	....	....	....
Hussey	....	....	....	....	....	....	....
Indep'd'nce	....	....	....	....	....	....	....
Jackson	....	....	....	....	....	....	....
Julia Con	4¼	4¼	4	4	3⅞	4	4
Justice	3⅝	3¾	.....	3½	3½	3¾	3½
Kentuck	....	....	....	....	....	4½	4¼
Kossuth	....	....	....	....	....	....	....
Leopard	....	....	....	....	....	....	....
Leviathan	....	....	....	....	....	....	20
Manhattan	....	....	....	....	....	....	....
McClinton	....	....	....	....	....	....	....
MeadowVal	....	....	....	....	....	....	....
Mexican	31¾	32¾	29¼	30	29¼	30½	29½
Mono	....	....	....	....	....	....	....
Navajo	....	....	....	....	....	....	....
North. Belle	9¾	9¾	.....	9½	9⅝	9½	.....
Ophir	24	24	21½	21¾	20¾	20¾	20½
Orig. K'ys'e	....	....	....	....	....	....	....
Overman	10½	11	10¼	10	9¼	9½	9½
P. Sheridan	....	....	....	....	....	....	....
Ray. & Ely.	5¼	5½	5	5	5	4¾	.....
Richer	....	....	....	....	....	....	....
Savage	10¼	10¼	9¾	10	9¾	9¼	9
Scorpion	....	....	....	....	....	....	....
Seg.Belcher	....	....	....	....	....	....	21
Sierra Nev.	45	46¾	43½	42¾	40¾	41½	40
Silver Hill	....	....	....	....	....	....	1½
Silver King	....	....	....	....	....	....	....
Summit	....	....	....	....	....	....	....
Tioga	....	....	....	....	....	....	....
Tip Top	....	....	....	....	....	....	....
Union Con.	58	60	57	57¼	54	55½	53
Utah	....	....	....	....	....	....	13
Ward	....	....	....	....	....	....	....
WashoeCon	....	....	....	....	....	....	....
Wells Fargo	....	....	....	....	....	....	....
Yel. Jacket.	14¾	14¾	15⅝	13¾	13½	13¾	13
....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....

Alpha is down to $17, a decline of $1½ for the week.

Alta is lower. A suit has been commenced in the Nineteenth District Court against certain trustees to recover $250,000, paid by the Alta Mining Company to the defendants, trustees of said company, on account of the Alta-Justice compromise, and which, it is alleged, the Justice Company never received.

Belcher shows a marked decline, opening to-day at $5⅝, against $9 a week ago. We note nothing of special importance from the mine.

Best & Belcher is down $1.50 per share.

Bullion is fairly steady.

Bodie shows a decided improvement, closing yesterday at $8 per share against $6 a week ago. In view of the very encouraging outlook for the mines of this district, this improvement is not unexpected. This company shipped $5273 on the 17th ult., the result of a clean-up from the Syndicate Mill, which closes its shipments for the present.

We have no quotation of Black Hawk. The stock is advancing on the San Francisco market, recent sales having been made at $4.15 per share, and the stock reported as quite active. The recent strike in the Warren vein of this mine is reported as being 4 feet in width, and will assay $65 per ton.

Bulwer has been sparingly dealt in on the San Francisco market at lessening prices. The ledges in the Stonewall stopes of this mine are looking well, and the company is making very satisfactory shipments.

Caledonia is steady. The O. & C. shaft is down over 530 feet.

Chollar-Potosi opens to-day at $40½, against $43 a week ago, and $44 at the close yesterday. This company is pumping over 100,000 gallons of water per day into the Sutro Tunnel, holding the water below the 2200 station.

The old bonanzas, California and Consolidated Virginia, are steady. Both of these companies are making very fair shipments, the combined product reaching over a half million per month, which would make a pretty good showing with almost any other two mines in the country.

Eureka Consolidated has materially recovered from the extraordinarily low price of a week ago, yesterday's closing quotation showing an improvement of nearly $3 per share. All reports from this mine are to the effect that no petering out of any of the ore-bodies is noticeable; indeed, the product for the week ending the 29d ult. showed a decided increase, the five furnaces of the company turning out for the week 317 tons of bullion or a trifle over 10 tons per day each.

Gould & Curry is lower. This company has put three shifts, of nine men each, to work in the old lower tunnel.

Grand Prize has fallen to $3½ per share. It appears that this mine does not furnish sufficient ore to supply its 20-stamp mill, only 10 of its stamps being employed on its own ore, and it is anticipated to start up the other 10 on ore from the Grand Central mine. We should judge, from recent published official letters, that this mine is not looking so well. But it is notoriously in the control of manipulators.

Hale & Norcross is $2 lower, nothing particularly interesting from this mine, the main operations consisting in contending with the water.

Hussey and Navajo are not selling on our Exchanges, and very sparingly in San Francisco at nominal prices. The Boston *Commercial Bulletin's* correspondent, writing from San Francisco, under date of March 19th, says the following concerning these properties:

"It is true Hussey produced $88,000 during the year but it must be remembered that is gross. Out of that has to come first 20 per cent for discount on silver. That reduces it to $70,400. Then there is the Nevada State tax of 2½ per cent; that takes off nearly $2000 more; freight on bullion, assaying expenses, and all that, brings down the net yield to but a trifle over $60,000, or $5000 a month. Now the cost of mining and milling and doing the work of prospecting exceeds that by nearly a thousand dollars a month. The Navajo is on the same basis. The little bullion it did turn out hardly paid the expense of getting it out, because the ore was not rich enough.

"As to Navajo and Hussey, neither is yielding at all; nor are they likely to until we find new and better bodies of ore."

Julia is slightly off. It is reported that a fine body of metal-bearing quartz has been found on the 1800 level of this mine.

Leviathan is not quoted on this market. Recent letters from the mine, however, are to the effect of "splendid progress," "excellent ore prospects," etc., etc. The following, from the *Commercial Bulletin's* correspondent, throws some light on the subject:

"For the benefit of your readers I will say that the Leviathan is a worthless claim, a sort of a squatter claim on the eastern edge of Crown Point ground. It has no ore, and never had any; has no title, and never had any; and is only one of twenty or thirty claims hanging on to the boundaries of the big mines, in the hope, in times of excitement, of attracting a rural fish or two into their nets. When Leviathan appears in our market at all, it is washed at about 10 cents a share. You couldn't get any body here to touch it with a forty-foot pole, and it will take more than a page puff in the *Mining Record* to make it worth any thing."

Manhattan does not recover from the low prices recorded in our last. Official letters from this mine are very favorable, and the company continues its regular shipments.

Mexican and Ophir are lower. Satisfactory progress in the development of the former mine is being made. Ophir is yielding about 70 tons of rich ore per day, taken from the 1900 and 2000 levels.

Union Consolidated and Sierra Nevada show marked declines, both of these mines are looking well, and the Sierra Nevada incline is reported in favorable quartz.

The *Commercial Herald* of March 26th says of the market:

"Rather sharp manipulations of the mining stock market occurred during the week under review. The drop was sudden and strong, creating a very perceptible flutter, but apparently exempt from that crippling effect that usually follows such a movement. While the slaughter of the innocents was rather startling, it seems to have been an entirely inside operation for more mud, which was not supplied with that readiness of times past, and consequently the placement of this marginal stock brought the market back to a somewhat better position. The opportunity seems to have been embraced to douse the Comstock 'water stocks' still more in view of the compromise arrangements with the Sutro Tunnel Company, and in this way discount the near future when it is expected that the great water conduit will prospectively, surmisingly, or actually reveal the bonanzas still existing on that lode. When that drain begins, we may, we believe, without a doubt look for a very active market. Bodie District shows marked activity, the various shares changing hands to a considerable extent. The active deal in mining shares the past week increased the aggregate sales in the San Francisco Board about half a million dollars."

The Little Pittsburg Cons. Mining Co., of Leadville, Colo., has declared a dividend of $125,000 for February.

THE COMSTOCK STOCKS.

A Gold Hill *News* reporter, in a conversation with a large operator, received the following views relative to the present depression in the San Francisco market, and the future moves in the leading Comstock stocks:

"I tell you, the market is mad, but it is the madness of the Prince of Denmark, with a method in it. The compromise with Sutro was off; the compromise was effected, and people expected securities to advance; connection was made in Sierra Nevada between the incline and the east shaft; an opening was effected with the North Consolidated Virginia shaft, and the lower levels of the Sierra Nevada were ventilated so as to greatly assist the work. Stocks fell. The Mexican north drift, 2000 level, neared Union Consolidated ground, and began to show good indications of the ore-body being found in the latter mine, just where Colonel Fair said it would be when he bought those 5000 shares of Union from Sherwood at $200 per share. The north drift in Consolidated Imperial turned out some rock, almost a milling proposition; Belcher and Crown Point promised much; the South End became pregnant with promises; the new Constitution is likely to be adopted; the new Constitution is likely to be rejected; the poverty of the people is apparent; capitalists call in loans and make money scarcer, and still stocks fall—it is all down, down, down; and there is a force and a purpose behind all this down, down, down, and men are fools if they do not see it." "But," says the bystander, "what is that purpose?" The reply was, "To gather them in. Once in comes consolidation. That is all well enough, for that means economy in mine management. But it means more. It means by and by listing the stocks in New York City. Then all will be changed. Every thing will then be up, up, up. By that time the water will be out of the flooded mines; the Sierra Nevada cross-cuts, whatever of the ore-body there is in the Union will be shown up; the ore-body in Ophir is magnified; the Bonanza mines do their best and declare a dividend or two; Imperial and Alta show their deposits; Yellow Jacket opens out its lower levels; Belcher and Crown Point cross-cut; Overman and Caledonia show their vein matter and a little something more; Alta and Benton open their mile of bared vein; Justice gets in on the 1500 level, under cross-cut No. 5. In short, every thing which can be shown in the whole stretch from Utah to Silver Hill will become a power. Stocks go up. I tell you there's a bigger deal coming than was ever known, and that is just where Mackey is going to make his more money this year than ever before, and do it legitimately. But by the time it gets here, we shall all be too poor to participate in it. The few who can stand the pressure will be rich. I tell you, New York has capital enough to float the whole Comstock at once."

As a plan there is probably a great deal of truth in the above, and the East will do well not to drop into the trap. "New York has capital enough to float the whole Comstock at once." Yes, and would not feel the investment; but has she the fools to go into it under present management? San Francisco capital is concentrated in the hands of a few large stock operators, and they must look to a new field for further large operations. That New York is the objective point has been clearly observable for a long time. Already a large amount of the stock of the Comstock mines is held in the East, and under an excited market in San Francisco, preceded by well-distributed "points," it is probable that considerably more can be placed here. Through the efforts of the press, however, our people have been made pretty familiar with the villainous management of the Comstock mines, and, excepting with that gambling element which exists in all society, but little attention will be given to these stocks. We are not looking for a $100 chance on a $5 investment, but are giving our attention to what appears to be a $6 certainty on a $5 investment. This class of mining investments has not met with popular favor on the Pacific Coast, and, owing to that fact, mines of that nature are being placed here, where money is abundant and smaller profits are expected.

February Bullion Production of Pacific Coast Mines.—We are indebted to the *Stock Report* of March 25th for the following:

"The following is a record of the yield of bullion from the various Pacific Coast mines for the month of February:

GOLD MINES.

Black Bear Quartz	$11,700
Bodie (estimated)	30,000
Caledonia (Dakota)	5,500
Idaho (Nevada County)	39,700
Original Amador	6,800
Pittsburg	7,800
Plumas Eureka	45,000
Sierra Buttes	31,000
Standard (5900 in silver)	87,700
Total nine gold mines	$265,200

SILVER MINES.

Alexander	$28,300
Christy (Utah)	23,300
Grand Prize ($3600 in gold)	57,100
Highbridge	40,800
Independence	18,000
Indian Queen	5,100
Leopard	6,800
Leeds (Utah)	12,100
Manhattan	50,000
Martin White	24,500
Northern Belle	68,100
Ontario	62,000
Oriental Consolidated	2,200
Paradise Valley	25,500
Silver King (Arizona)	41,000
Star	20,400
Tip Top (Arizona)	39,200
Total seventeen silver mines	$525,000

GOLD AND SILVER MINES.

	Gold.	Silver.	Total.
California	$83,300	$82,600	$165,900
Con. Virginia	131,000	165,100	296,100
Ophir	70,300	74,700	165,000
Totals	$284,600	$342,400	$627,000

BASE METAL MINES.

	Gold.	Silver.	Lead.
Eureka Consolidated	$102,500	$106,700	$70,900
Hillside	1,200	54,900	3,700
Tybo Consolidated	4,900	41,400	8,500
Totals	$108,600	$203,000	$83,100

Total gold	$656,100
Total silver	1,072,700
Total lead	83,100
Aggregate	$1,811,900
Aggregate for January	$1,960,900
Aggregate for January, 1878	4,849,800

"This large decrease is due mainly to the diminished yield of the bonanzas, though some of the other larger mines have fallen off largely within the year. For instance, in the first two months of 1878, the Eureka Consolidated yielded $697,200, against $545,600 for the same time this year; Grand Prize, $282,100 in 1878, against $137,100 this year; and Ontario $338,700 in 1878, against $125,900 this year. Several mines that were on the lists for the first two months last year are not producing this year, while new claims have been added."

Yield of the Ophir Mine.—The Ophir mine began producing from the present ore-body in December, 1878. The product for the three months is as follows:

December, 1878	$69,900
January, 1879	191,000
February	165,000
Total	$425,900

On Saturday last there were further shipments from the bonanza mines, and the totals for March to date are as follows:

	Con. Virginia.	California.
March 22d	$74,689	$82,829
Previously	130,512	135,795
Totals	$205,201	$218,624

ASSESSMENTS with dates when delinquent: Phil Sheridan, 40c., April 25th; Defiance, 20c., April 20th; Amazon Con., 10c., April 28th; Hazard Gravel, 10c.; Silver King South, 10c., April 23d.

Copper and Silver Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Thursday Evening, April 2, 1879.

The market showed unmistakable signs of weakness in the early part of the week and fell off from one to two per cent, but closes stronger on the "board" stocks, while those not on the regular list are still weak and in little demand.

Calumet & Hecla, after having declined to 172, rallied, and sold up to 173¾, and closes firm at 173¼@173¾.

Copper Falls is quiet, at 1⅛@1¾ (ass. paid), and ⅛@¼ (ass. unpaid), and few sales.

Franklin is quiet and unchanged.

Osceola is steady, at 10½@11¼, and seems to be awaiting developments.

Pewabic is quiet, at ¾@1.00, and no sales.

Quincy is being worked round between 10 and 11, without any great amount of stock changing hands, and is probably a purchase at these figures.

Ridge was quoted down to 75c., but none could be purchased at that figure, and the stock immediately reacted to ⅞ bid and $1 asked.

Duncan has sold at 4¾ and 4½, and closes rather weak at 4⅜@4½.

International is firm, at 45@50c., and sales at 48c.

Silver Islet has fluctuated between 57 and 59½, large amounts being quoted as sold, which, if divided by two, would probably represent the actual amount of sales. It closes at 56¾@57¼.

Sullivan Silver is offered freely at about $8, and few buyers, although the parties who are most interested in it still pretend to receive good reports from the mine, and represent the stock as being worth $12 per share. But either the prime movers in it and their friends lack money or confidence in the stock, for it sells slowly.

Alta is offered at $2, and is about 1¾ bid, and the reports from the mine continue to be favorable, notwithstanding.

Phœnix Copper Mine Annual Report.—From the *Mining Gazette* of March 27th we extract the following, showing the operations of this company during the past year:

RECEIPTS.

Shipped and smelted 698,910 lbs mineral yielding 74·63 per cent, or 521,597 lbs. of fine copper, which with 45,802 lbs. on hand January 1st, 1878, makes 567,399 lbs., of which there have been sold 533,160 lbs. at the average price of 16·41 cents, amounting to		$87,512.54
Copper on hand January 1st, 1879, 34,239 lbs., at 15 cents		5,135.85
Mineral on hand January 1st, 1879, 92,270 lbs. at 10 cents		9,227.00
Received for silver sold, 727·1 ounces		777.12
Received from tributors		236.04
		$102,888.55

LESS.

Mineral on hand January 1st, 1878	$11,725.00	
Copper " " " " "	7,786.34	
		19,511.34
		$83,377.21

The directors report as follows:

"The business of the company for the past year has been a losing one, but no more so than was anticipated at the last annual meeting, as it was expected that we should probably use up the surplus, with copper at 17 cents per pound. As the price realized was below this figure, the loss has been a trifle more.

"The policy which has been adopted by the directors is to realize from the mine as fast as possible, without injury to the mine, and to pay the debts, which we expect to do without being obliged to levy an assessment.

"The outlook for the future is discouraging with the present price of copper. At the same time, the mine is looking better than it has for several months, and the machinery and fixtures are in good condition."

From the agent's report we take the following: "The mine has, during the year past, been very poor, yielding less copper than for any year during the past five; and, though the expenses of working have been very much reduced, the result of the year's work must show a loss. For the first three months of the year, we continued the old plan of work, running up to full capacity; but it soon became necessary to change the plan to suit the altered circumstances underground, and on April 1st a large reduction of force was made, running the mill by day, or half time, only; this plan reduced our product, but we were enabled to largely reduce the expenses, and in that way make considerable saving to the company, and was by far the best course to adopt. The history of the openings through the ground worked last year was such that the small amount of copper obtained in stoping was a great surprise, and can only be explained as being one of those freaks that often occur in fissure-veins."

FINANCIAL.

LEADVILLE, COLORADO.
Parties wishing to invest money in large or small amounts, in Leadville Mines, can send letters of credit, or draft, through the Lake County Bank, Leadville, to A. P. W. Skinner & Co. Refer to First National Bank and Commercial National Bank, of Chicago, Ill.

W. W. HANLY & CO., BANKERS AND BROKERS, 60 Broadway, New York,
Buy and sell mining stocks on commission on New York Mining Stock Exchange, and offer superior facilities on San Francisco Exchanges through agency of the Bank of California.

VAN DEVENTER & PATTON,
Successors to LUDLOW PATTON & Co.,
Bankers and Brokers,
NO. 6 WALL STREET, NEW YORK.
C. H. VAN DEVENTER. WILLIAM LUDLOW PATTON.
Stocks, Bonds, Gold and Government Securities Bought and Sold on Commission. Loans negotiated. Interest allowed on deposits. Dividends and Interest Warrants collected and remitted.

THE PLUMAS
National Quartz Mining Co. of California.
Business and Transfer Agency of Company,
54 Broad Street, N. Y., Room 8.
Sole Agents for Sale of Stock. **L. P. BAYNE & CO.**
54 Broad Street, N. Y., Room 8.

PARKER HANDY. —— J. S. CRONISE.
HANDY & CRONISE,
BANKERS,
AND DEALERS IN
Bullion and Specie,
24 NASSAU ST., NEW YORK.
Dealing exclusively in
GOLD AND SILVER BULLION AND COINS
of all kinds, we are prepared to guarantee satisfaction to those who may intrust their business to us.
We will make special arrangements with BANKERS and others dealing in GOLD DUST or in GOLD OR SILVER BARS, and will pay over to their correspondents here, as we may be directed, advances on Bullion when received or when the proceeds are ascertained.
We refer to:
American Exchange N. Bank, The Third National Bank,
Winslow, Lanier & Co., Eugene Kelly & Co.,
Eugene S. Ballin & Co.

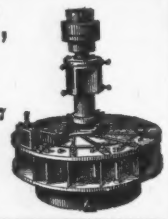
LONE ELM MINING & SMELTING COMPANY.
Manufacturers of the
M. & S. JOPLIN EXTRA REFINED
PIG-LEAD AND PURE OXIDE OF LEAD,
JOPLIN, MO.
E. R. MOFFET, Pres't. GEORGE A. CASE, Sec'y.
BEHR & STEINER, AGENTS, NEW YORK.

W. H. ASHTON. P. DOYLE.
ASHTON & DOYLE,
Dealers in Gold and Silver Mines and Valuable
MINERAL PROPERTIES,
solicit correspondence for sale or purchase.
161 Broadway, New York.

$10 to $1000 invested in Wall Street Stocks makes fortunes every month. Book sent free explaining every thing.
Address BAXTER & CO., Bankers, 17 Wall St., N. Y.

LEFFEL WATER WHEELS,

With recent improvements.
Prices Greatly Reduced.
7,000 in successful operation.
Fine New Pamphlet for 1877
Sent free to those interested.
James Leffel & Co.,
SPRINGFIELD, O.
109 Liberty Street, New York City.



THE ENGINEERING AND MINING JOURNAL
Of New York.

Published Weekly. Splendidly Illustrated.

EDITORS:
RICHARD P. ROTHWELL, Mining and Civil Engineer.
ROSSITER W. RAYMOND, Ph.D., U. S. Commissioner of Mining Statistics.

THE BEST
MINING AND METALLURGICAL PAPER
IN THE WORLD.

Gives every thing new in
MINING, METALLURGY, ENGINEERING, GAS-MAKING, ELECTRIC LIGHTING, AND IN SCIENCE GENERALLY.

Combines the practical value of complete trade reports, prices, etc, with the highest technical and scientific information.

SUBSCRIPTION PRICE, including postage: U. S. and Canada, $4; Great Britain, 20 | ; France and Belgium, 25 francs; Germany, 20 marks; South America, $6. Remittances should be made in Post-office orders or bank drafts on New York. Specimen copies sent on receipt of 10c.

No. 27 Park Place, New York.

CALLON, J.—Lectures on Mining, delivered at the School of Mines, Paris. By J. Callon, Inspector-General of Mines. Translated at the Author's Request by C. Le Neve Foster, D.Sc., and W. Galloway, H. M. Inspector of Mines. In Three Volumes. London and Paris: 1876. Vol. I., 8vo, cloth, pages 459; and Vol. I., Atlas of Plates, 4to, half bound, 40 plates. The two volumes, $9.25.

Address,
THE SCIENTIFIC PUBLISHING CO.,
P O. Box 4404. 27 Park Place, New York.

THE BUELL GOLD MINING CO.,
OF COLORADO,

To be organized under the laws of the State of New York, with a capital of $500,000, divided into 100,000 shares of $5 each, full paid and unassessable. 50,000 shares of said capital will be set aside to provide funds for the further development of the property, of which 40,000 shares are now offered to subscribers at $1.25 per share.

On a Basis of $125,000 for the Property, with $50,000 Cash and 10,000 Shares in the Treasury.

There are 3000 feet on the Leavite, Kip, and Vasa lodes, all covered by United States Patents.

The improvements on the property consist of a 60-stamp mill complete, with an 80 horse-power engine for driving the same; also a 70 horse-power engine for hoisting and pumping, all in first-class condition, and inclosed in substantial stone buildings. The "Buell Mine" has produced nearly a million dollars in bullion, and is well known as one of the best gold mines in the State.

Subscriptions to the stock are received by R. H. RICKARD, No. 30 Pine street, New York.

CHEYENNE GOLD MINING COMPANY
OF BLACK HILLS, DAKOTA TERRITORY.

MINE LOCATED IN THE GREAT MINERAL BELT NEAR DEADWOOD.

ORGANIZED UNDER THE LAWS OF THE STATE OF NEW YORK.

CAPITAL STOCK, $1,000,000. PAR VALUE OF SHARES, $5.

FOREVER UNASSESSABLE.

R. P. CORMACK,.....President | D. B. CANOL..Vice-President and General Manager,
R. McNAUGHT.....Secretary and Treasurer | Deadwood, D. T.

This mine is situated in the heart of the Black Hills, and on the acknowledged richest gold belt on this continent, if not in the world.

The improvements on the mine consist of a shaft 36 feet deep, from which a drift has been run 21 feet, all in paying ore. On a level with the orifice of the shaft a drift has been driven 42 feet, with a northeasterly cross-cut 28 feet 7 inches, from where a back stope was run up to the grass roots, giving a breast of 31 feet 10 inches, and 37 feet wide. Eighty-five feet below the adit a tunnel has been commenced and run 66 feet, and will strike the ore-body at present disclosed at the bottom of the shaft 22 feet lower.

From this work 250 tons of ore have been milled as a test, the lowest being $8.40, and highest $25.60. The work thus accomplished shows at the lowest estimate 10,000 tons of ore in sight.

The Directors have set aside 50,000 shares of stock for the purchase of machinery, 20,000 of which are offered for sale at $1 per share until further notice.

We respectfully invite the closest scrutiny and most searching investigation into the merits of this property.

R. P. CORMACK, President. **R. McNAUGHT, Secretary,**
Office, 61 Broadway, Room 38, New York.

ADVERTISERS' INDEX.

Page.

Advertising Agents:
Rowell, Geo. P. & Co., New York v

Air Compressors:
Clayton, Steam Pump Works, Brooklyn, N. Y. i
Griffith & Wedge, Zanesville, Ohio iii
Rand Drill Co., New York xii
National Drill and Compressor Co., New York xii

Attorneys and Counselors:
Drinker, Henry S., Philadelphia, Pa..... ix

Bankers and Brokers:
Ashton & Doyle, New York..... 253
Baxter & Co., New York..... 253
Handy & Cronise, New York..... 253
Hanley, W. W., & Co., New York..... 253
Skinner, A. P. W. & Co., Leadville, Colo.. 253
Van Deventer & Patton, New York 253

Belting and Rubber:
New York Belting and Packing Co., N. Y. ii
Gutta Percha & Rubber Mfg. Co., N. Y.. ii

Blasting Powder:
Laflin & Rand Powder Co., New York.... iii
Miners' Supply Co., St. Clair, Pa..... iii

Blowers:
Wilbraham Bros., Philadelphia, Pa. xii
Worthington, H. R., New York..... iii

Boilers, Boiler Tubes, and Steam and Water Pipes:
Blandy, H. & F., Zanesville, O.. ii
Eagle Tube Co., New York iv
St. Louis Boiler Yard, St. Louis, Mo..... —
Worthington, H. R., New York..... iii

Bolts:
Shumway, Burgess & Co., Chicago, Ill.... i

Books and Periodicals:
American Journal of Science and Art.... ix
Brick, Pottery, and Glass Journal, N. Y. iv
Capital and Labour, London, Eng..... ix
Claxton, Remsen & Haffelfinger, Phila.... v
Colliery Guardian, London, Eng..... ix
Denver Tribune, Denver, Colo..... ix
Engineering, London, Eng v
Gold and Silver Mines of America, N. Y.. iv
La Houille, Paris, France..... ix
Manufacturer and Builder, New York.... ii
Miners' Journal, Pottsville, Pa ix
Railway Age, Chicago, Ill..... ix
Teknisk Tidskrift, Stockholm, Sweden.. ix

Clay Mines:
Ernst, Otto, South Amboy, N. J. ii

Clocks:
Seth Thomas, Thomaston, Conn ii

Coal:
Berwind, White & Co., New York..... xi
Borda, Eugene (Koh-i-noor Coal), Phila... xi
Borden & Lovell, New York..... xi
Consolidation Coal Co., Baltimore, Md.... xi
Coxe Bros. & Co., New York..... xi
Cox & Boyce, New York..... xi
Heissenbuttel & Wells, New York..... xi
Hoboken Coal Co., Hoboken, N. J..... xi
Maryland Coal Co., New York..... xi
New Central Coal Co., New York..... xi
Philadelphia & Reading Coal & Iron Co... xi
Swords, A. S. New York..... xi

Contractors:
Blandy, H. & F., Zanesville, O ii

Copper Dealers:
Baltimore Copper Co., Baltimore, Md.... xii

Crucibles:
Frasse & Co., New York..... vi

Emery Wheels:
New York Belting and Packing Co., N. Y. ii

Engineers and Chemists:
Bradt, W. H., Leadville, Colo.... ix
Harden, John Hy., Philadelphia, Pa.... ix
Hooker, W. A., New York..... ix
Keyes, W. S., San Francisco, Cal..... ix
Porter, J. A. Eureka, Nev..... ix
Randolph, John C., New York..... ix
Rothwell, Richard P., New York..... ix
Stwolinski, F. de, Joplin..... ix
Wulsten, Carl, Rosita, Col..... ix
Wilson Bros. & Co., Philadelphia..... ix

Engineers' Instruments:
Gurley, W. & L. E., Troy, N. Y..... iv
Heller & Brightly, Philadelphia..... vi
Keuffel & Esser, New York..... v
Woolman, G. S., New York..... vi

Engraving:
The Heliotype Printing Co., Boston.. i

Financial:
Baxter & Co., New York..... 253

Fire Brick:
Maurer, Henry, New York..... ii
Ernst, Otto, South Amboy, N. J..... ii

Gas Engines:
Otto's Silent, Philadelphia, Pa..... vi

Gas Process:
American Gas Fuel and Light Co., N. Y .. iv

Hoisting Machinery:
Crane Brothers Man'f'g Co., Chicago, Ill.. x
Griffith & Wedge, Zanesville, O..... iii

Ice Machines:
Pictet Ice Co., New York..... vi

Iron Works For Sale:
Boonton Iron Works, New York..... vi

Locomotives:
Manchester Locomotive Works, Manchester N. H... i

Machinery:
Blandy, H. & F., Zanesville, O..... ii
Pratt and Whitney Co., Hartford, Conn.. iv

Metal Brokers:
White, Edward P., New York..... ii

Mineral Wool:
Elbers, Alexander D., New York..... iii

Mining Companies:
Buell Gold Mining Co., New York..... viii
Cheyenne Gold Mining Co., New York.... viii
Plumas National G. Mining Co., New York. 253

Mining Milling and Smelting Machinery:
Aitchison, R. & Co., Chicago, Ill..... v
Blake's Stone Breaker, New Haven, Conn. vi
Copeland & Bacon, New York..... xii
Crane Bros. Mfg. Co., Chicago, Ill..... x
Fraser, Chalmers & Co., Chicago, Ill..... iv
Foster-Firmin G. & S. Amalgamating Co., Norristown, Pa..... iii
Griffith & Wedge, Zanesville, O.. iii
Morey & Sperry, New York..... ii

Oils:
Leonard & Ellis, New York v

Perforated Sheet Metals:
Aitchison, R. & Co., Chicago.. v

Patents:
Lehman, F. A. Washington, D. C. ix
Scientific American Patent Agency, New York. vi

Pig Lead:
Lone Elm Mining and Smelting Co., Joplin, Mo..... i 253

Photography:
Rockwood, George G., New York..... ....

Pumps:
Cameron, A. S., New York..... iii
Clayton Steam Pump Works, Brooklyn, N. Y..... i
Crane Brothers Manufac'g Co., Chicago.. iii
Deane Steam Pump Works, New York ... iii
Knowles Steam Pump Works, New York. i
Worthington, H. R., New York..... iii

Railroads and Transportation:
Colorado Central R.R..... ix
New York & Philadelphia New Line ix
Pennsylvania R.R..... x

Rock Drills:
Am. Diamond Rock Boring Co., N. Y..... xii
Burleigh Rock Drill Co., Fitchburg, Mass. xii
Ingersoll Rock Drill Co., New York.....ii, xii
National Drill & Compressor Co., New York..... xii
Penn. Diamond Drill Co., Pottsville, Pa. xii
Rand Drill Co., New York..... xii
Sampson, Geo. H., Boston, Mass xii

Roofing:
Hyndman, W. G., & Co., Cincinnati, O... vi
Scaife, Wm. B., & Sons, Pittsburg, Pa..... vi

Rope and Blocks:
Gilbert, Hubbard & Co., Chicago, Ill..... ii

Safes and Scales:
Chicago Scale Co., Chicago, Ill..... i
Marvin Safe & Scale Co., New York..... xii

Saws:
Curtis & Co., St. Louis, Mo vi

Smelting and Refining Works:
Foster-Firmin G. & S. Amalgamating Co., Norristown, Pa..... iii
Robertson, R. J., New York..... ii
Stetefeldt Furnace Co., San Francisco, Cal. i

Steam-Engines:
Blandy, H. & F., Zanesville, O..... ii

Steam Fire-Engines:
Manchester Locomotive Works, Manchester, N. H..... i

Steel Works:
Crescent Steel Works, Pittsburg, Pa... v
Park, Bro., & Co., Pittsburg, Pa..... v
Quincy, J. W., New York..... —

Tackle Blocks:
Bagnall & Loud, Boston, Mass..... xii

Taps and Dies:
Pratt & Whitney Co., Hartford, Conn.... iv

Tramway:
American Wire-Rope Tramway Co., Phila. v

Valves:
Mohawk and Hudson Manufacturing Co., Waterford, N. Y..... iii

Watchman's Time Detector:
Buerk, J. E. Boston, Mass ii

Water Wheels:
Leffell, James, & Co., Springfield, O viii

Wire Rope:
Channon, H., & Co., Chicago, Ill iv
Copeland & Bacon, New York..... xii
Haigh, J. Lloyd, New York..... i
Hazard Mfg. Co., Wilkes-Barre, Pa..... v
Hubbard, Gilbert & Co., Chicago..... ii
Mason, John W. & Co., New York..... i
Roebling's, J. A., Sons Co., Trenton, N. J. iv